

## Section H: Impacts and Benefits

Implementation of projects in this Integrated Regional Water Management (IRWM) Plan will result in significant water resource and environmental benefits for the Greater Monterey County planning region. The Greater Monterey County IRWM Plan includes the following types of projects:

- *Water supply projects*, including construction of an interlake tunnel between Lake San Antonio and Lake Nacimiento; an urgently needed water supply system for the Granite Ridge area; a test well for a proposed desalination project for the Monterey Bay area; and an aquatic invasive species inspection project for Lake San Antonio and Lake Nacimiento.
- *Water recycling projects*, including facilities needed for recycled water distribution in the City of Soledad and for recycled water distribution in the Marina Coast Water District (MCWD) service areas.
- *Water supply infrastructure improvement projects*, including arsenic removal for the drinking water supply in Castroville (a disadvantaged community [DAC]); construction of a new well, storage tank, and distribution system to provide a potable water supply for the communities of Springfield and Moss Landing Mobile Manor (DACs) to comply with Nitrate Maximum Contamination Level and saltwater intrusion regulations; a new well and pipeline to replace the single existing well for San Lucas; and the lining of reservoirs and canals at San Bernabe Vineyards.
- *Groundwater improvement and protection projects*, including coastal dedicated monitoring wells to help monitor seawater intrusion, and urban and agricultural runoff water quality improvement projects, such as the UC Davis low impact development (LID) research project, the Monterey Bay Sanctuary Foundation's best management practice (BMP) implementation project in Santa Rita Creek Watershed, and the Resource Conservation District (RCD) of Monterey County's farm water quality assistance programs.
- *Wastewater facility improvements*, including upgrade of the wastewater facility in San Jerardo (a DAC); industrial wastewater conveyance and treatment facility improvements in the City of Salinas; an Inspection and Monitoring pilot program for DAC onsite wastewater systems; and storm drain improvements in Las Lomas.
- *Water quality improvement programs*, including farm water quality assistance, on-farm erosion control, irrigation and nutrient management evaluation, and implementation of BMPs on livestock facilities and rangelands (led by the RCD of Monterey County); BMP implementation in Santa Rita Creek (led by the Monterey Bay Sanctuary Foundation, RCD of Monterey County, and Central Coast Wetlands Group); implementation of a Green Gardener Program (led by Ecology Action and the RCD of Monterey County); and a regional project tracking program to monitor progress in addressing the goals of improved water quality, water supply, flood control and environmental protection outlined in the IRWM Plan (led by the Monterey Bay National Marine Sanctuary).
- *Major wetland and dune restoration projects* in Tembladero Slough, Moro Cojo Slough, and the dunes near Moss Landing (all led by the Central Coast Wetlands Group), and in Elkhorn Slough (led by the Elkhorn Slough Foundation).
- *Watershed management programs*, including watershed restoration activities in Santa Rita Creek Watershed; watershed planning and management in the Northern Gabilan Watershed (led by the Central Coast Wetlands Group); invasive non-native plant removal in the Salinas River Watershed (led by the RCD of Monterey County); and an annual coastal river and beach litter

removal program (led by Save Our Shores).

- *Steelhead enhancement projects*, including the Salinas River Fisheries Enhancement Project (led by the Monterey County Water Resources Agency [MCWRA]), and implementation of the Big Sur River Steelhead Enhancement Plan (led by California State Parks).
- *Flood protection projects*, including flood risk reduction for the Salinas River (consisting of National Environmental Policy Act/California Environmental Quality Act [NEPA/CEQA]) preparation and led by MCWRA), and several wetland/watershed restoration projects that will produce significant flood protection benefits.

Together these projects are anticipated to achieve the following regional goals, as outlined in this IRWM Plan:

- Improve water supply reliability and protect groundwater and surface water supplies
- Protect and improve surface, groundwater, estuarine, and coastal water quality, and ensure the provision of high-quality, potable, affordable drinking water for all communities in the region
- Develop, fund, and implement integrated watershed approaches to flood management through collaborative and community supported processes
- Protect, enhance, and restore the region's ecological resources while respecting the rights of private property owners
- Promote regional communication, cooperation, and education regarding water resource management
- Ensure the provision of high-quality, potable, affordable water and healthy conditions for disadvantaged communities
- Adapt the region's water management approach to deal with impacts of climate change using science-based approaches, and minimize the regional causal effects

Some adverse environmental impacts may also be expected from implementation of the IRWM Plan, though projects are purposefully developed to minimize environmental impacts. Construction-related impacts may include temporary and localized disturbances to air and water quality, habitat, and other physical factors including the following:<sup>1</sup>

- *Water Resources*. Construction of proposed projects may result in increased erosion and sediment delivery to waterways in the vicinity of project sites, temporary changes in the watershed's hydrograph, or other impacts associated with construction activities that may degrade water resources.
- *Air Quality*. Construction-related increases in PM10 (particulate matter on the order of ~10 micrometers or less) and ozone precursor emissions may result from operation of construction equipment, vehicles, and airborne dust during site grading and/or excavation.
- *Noise*. Construction noise and vibration impacts may result from construction equipment, vehicles, and activities.
- *Hazardous Materials*. Project construction could result in spills of fuel, lubricants, pesticides, or other substances used in construction equipment.
- *Biological Resources*. Construction associated with proposed projects may result in the direct loss

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<sup>1</sup> Thanks to the San Francisco Bay Area IRWM Plan for outlining these potential construction-related impacts.

or indirect disturbance of special-status plants and wildlife species that are known to or could occur in the region. Construction-related impacts may also include temporary unavailability and/or degradation of wildlife habitat, and short-term disturbance of wildlife as a result of construction noise. These impacts may result in a reduction in local population size, lowered reproductive success, and/or habitat fragmentation.

- *Transportation.* Construction of proposed projects may result in temporary lane closures, detours, closure of transit stops, and the addition of construction trucks and equipment on the surrounding roadway system. Construction may potentially increase delays and congestion.

This chapter describes the anticipated benefits and potential impacts that will result from the implementation of this IRWM Plan, both on a project-specific level and in terms of how the projects will help achieve regional goals. Potential impacts and benefits to DACs specifically are also discussed.

### **H.1 HOW PROJECTS ACHIEVE IRWM PLAN OBJECTIVES**

There is inherent value in the IRWM planning process in providing a systematic method for defining, and then achieving, regional water resource management goals.

Table H-1 on the following pages illustrates how projects in the IRWM Plan, including those currently being implemented, will contribute toward addressing regional objectives. The table shows both the number of projects (out of 38 total) that will address each objective, and then the extent, on average, to which those projects are expected to address the objectives (on a scale from 0-5).<sup>2</sup>

Of the resource-specific goals, the table indicates that the goal category “best addressed” by projects currently in the IRWM Plan is Water Quality, followed by Environment, then Water Supply, then Flood Protection/Management. Most of the projects in the Plan address the Regional Communication and Cooperation goal. More than half of the projects address DAC objectives, either directly or indirectly.

Note that every objective is addressed at least to some extent by projects in the IRWM Plan. With every Plan review and update, the objectives will be reviewed to assess the extent to which they are being achieved (see Section J, Plan Performance and Monitoring). As the IRWM planning process continues, new projects will be developed, either as concept proposals or as full implementation projects, to address the gaps in achieving the goals and objectives of this IRWM Plan.

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<sup>2</sup> Methodology: Each project was reviewed for how likely it was to achieve IRWM Plan objectives. For each project, a score of 0-5 was given for each IRWM Plan objective (these scores were first provided by the project proponents themselves, and then adjusted if deemed necessary by the Project Review Committee). Then for each objective, an average score was determined based on the projects that scored between 1-5 for that objective.

**Table H-1: Number of Projects that will Implement the Plan Objectives**

OBJECTIVES	# of projects that address each objective (total = 38 projects)	Extent to which those projects address objective (avg. 0-5)
<b>Water Supply</b>		
Increase groundwater recharge and protect groundwater recharge areas.	18	3.2
Optimize the use of groundwater storage with infrastructure enhancements and improved operational techniques.	8	3.3
Increase and optimize water storage and conveyance capacity through construction, repair, replacement, and augmentation of infrastructure.	11	3.6
Diversify water supply sources, including but not limited to the use of recycled water.	10	3.3
Maximize water conservation programs.	12	3.8
Capture and manage storm water runoff.	13	3.2
Optimize conjunctive use where appropriate.	6	3.7
Support research and monitoring to better understand water supply needs.	7	3.9
Support the creation of water supply certainties for local production of agricultural products.	6	2.8
Promote public education about water supply issues and needs.	7	2.6
Promote planning efforts to provide emergency drinking water to communities in the region in the event of a disaster.	4	4.0
<b>Water Quality</b>		
Promote practices necessary to meet, or where practicable, exceed all applicable water quality regulatory standards (for drinking water, surface and groundwater quality).	28	3.9
Promote projects to prevent seawater intrusion.	13	3.6
Incorporate or promote principles of low impact development where feasible, appropriate, and cost effective.	9	2.8
Protect surface waters and groundwater basins from contamination and the threat of contamination.	25	3.9
Support research and pilot projects for the co-management of food safety and water quality protection.	9	3.3
Improve septic systems, sewer system infrastructure, wastewater treatment systems, and manure management programs to prevent water quality contamination.	8	3.6
Support research and other efforts on salinity management.	4	3.8
Support monitoring to better understand major sources of erosion, and implement a comprehensive erosion control program.	11	3.4
Promote programs and projects to reduce the quantity and improve the quality of urban and agricultural runoff and/or mitigate their effects in surface waters, groundwater, and the marine environment.	17	4.3
Promote regional monitoring and analysis to better understand water quality conditions.	16	3.9
Support research and utilization of emerging technologies (enzymes, etc.) to develop effective water pollution prevention and mitigation measures, and source tracking.	8	3.3
Promote public education about water quality issues and needs.	24	3.7
<b>Flood Protection/ Management</b>		
Promote projects and practices to protect infrastructure and property from flood damage.	12	3.4
Improve flood management infrastructure and operational techniques/strategies.	9	2.8

Implement flood management projects that provide multiple benefits such as public safety, habitat protection, recreation, agriculture, and economic development.	13	3.1
Develop and implement projects to protect, restore, and enhance the natural ecological and hydrological functions of rivers, creeks, streams, and their floodplains.	16	3.7
Support research and monitoring efforts to understand the effects of flooding on transport and persistence of pathogens in food crop production areas.	5	1.8
Support management of flood waters so that they do not contaminate fresh produce in the field.	10	2.9
Promote public education about local flood management issues and needs.	11	2.7
<b>Environment</b>		
Support science-based projects to protect, improve, enhance, and/or restore the region's ecological resources, while providing opportunities for public access and recreation where appropriate.	21	3.6
Protect and enhance state and federally listed species and their habitats.	21	3.4
Minimize adverse environmental impacts of water resource management projects.	16	3.1
Support applied research and monitoring to better understand environmental conditions, environmental water needs, and the impacts of water-related projects on environmental resources.	17	4.0
Implement fish-friendly stream and river corridor restoration projects.	10	3.9
Reduce adverse impacts of sedimentation into streams, particularly from roads and non-point sources.	17	3.6
Promote efforts to prevent, control, reduce, and/or eradicate high priority invasive species.	15	4.2
Promote native drought-tolerant plantings in municipal and residential landscaping.	4	3.5
Consider opportunities to purchase fee title or conservation easements on lands from willing sellers that provide integrated water resource management benefits. Ensure adequate funding and infrastructure to manage properties and/or monitor easements.	7	4.3
Support research and monitoring efforts to understand the effects of wildfire events on water resources.	2	2.0
<b>Regional Communication and Cooperation</b>		
Facilitate dialogue and reduce inconsistencies in water management strategies/regulations between local, regional, state, and federal entities.	26	3.4
Promote dialogue between federal and state regulators and small water system managers to facilitate water quality regulation compliance.	11	2.2
Foster collaboration between regional entities to minimize and resolve potential conflicts and to obtain support for responsible water supply solutions and improved water quality.	29	3.3
Build relationships with federal, state, and local regulatory agencies and other water agencies to facilitate the permitting, planning, and implementation of water-related projects.	22	3.2
Increase stakeholder input and public education about the need, complexity, and cost of strategies, programs, plans, and projects to improve water supply, water quality, flood management, coastal conservation, and environmental protection.	26	3.3
<b>DAC</b>		
Seek funding opportunities to ensure all communities have a water system with adequate, safe, high-quality drinking water.	4	4.3
Seek funding opportunities to ensure all communities have adequate wastewater treatment.	4	4.0
Ensure that disadvantaged communities are adequately protected from flooding and the impacts of poor surface and groundwater quality.	18	3.1

Provide support for the participation of disadvantaged communities in the development, implementation, monitoring, and long-term maintenance of water resource management projects.	14	3.6
Promote public education in disadvantaged communities about water resource protection, pollution prevention, conservation, water quality, and watershed health.	20	3.3
<b>Climate Change</b>		
Plan for potential impacts of future climate change.	16	2.9
Support increased monitoring and research to obtain greater understanding of long-term impacts of climate change in the Greater Monterey County region.	6	3.3
Support efforts to research alternative energy and to diversify energy sources appropriate for the region.	3	3.0
Seek long-term solutions to reduce greenhouse gas producing energy use.	10	2.3
Seek long-term solutions to maintain and protect existing pristine natural resources from the impacts of climate change.	8	2.9
Support research and/or implementation of land-based efforts such as carbon-sequestration on working lands and wildlands in the Greater Monterey County region.	5	2.2
Promote public education about impacts of climate change, particularly as it relates to water resource management in the Greater Monterey County region.	9	2.3

## **H.2 IMPACTS AND BENEFITS TO DACS AND ENVIRONMENTAL JUSTICE CONCERNS**

All projects included in the IRWM Plan are reviewed for potential impacts to DACs and for potential environmental justice concerns as part of the regular project review process. If a potential impact to a DAC or an environmental justice concern is found, the project will not necessarily be eliminated from the Plan, but the issue will be discussed with the project proponent, mitigating factors will be considered, and a decision will then be made as to whether or not the project should remain in the Plan. Thus far, no potential impacts to DACs or environmental justice concerns have been found in any of the projects submitted for inclusion in the IRWM Plan.

On the other hand, numerous benefits to DACs are expected to result from implementation of the IRWM Plan. Several projects included in the Plan promise DAC benefits, including (an asterisk means the project is currently being implemented through Round 1 of the IRWM Implementation Grant Program):

- San Jerardo Cooperative: San Jerardo Wastewater Project\*
- Castroville Community Services District: Well 2B Treatment Project\*
- Rural Community Assistance Corporation: Greater Monterey Bay Disadvantaged Community Wastewater Management Pilot Program
- Pajaro/Sunny Mesa Community Services District: Springfield Water System
- Monterey Bay Sanctuary Foundation: Watershed Approach to Water Quality Solutions\*
- Elkhorn Slough Foundation: Integrated Ecosystem Restoration in Elkhorn Slough\*
- Central Coast Wetlands Group: Tembladero Restoration and Castroville Community Public Access, Phase I\*
- Central Coast Wetlands Group: Northern Gabilan Mountain Watershed Management Project
- Central Coast Wetlands Group: Implementation of the Moro Cojo Slough Management and Enhancement Plan: Restoration of the Upper Slough
- Central Coast Wetlands Group: Study of Environmental Services from Nutrient Reducing BMPs
- Central Coast Wetlands Group: Water Quality Enhancement of the Tembladero Slough, Phase II
- RCD of Monterey County: Monterey County Farm Water Quality Assistance Program
- Central Coast Wetlands Group: Coastal Wetland Erosion Control and Dune Restoration
- Monterey County Water Resources Agency: Salinas River Flood Risk Reduction Project
- Ecology Action: Monterey Bay Green Gardener Training & Certification Program
- RCD of Monterey County: Livestock and Land: Rangeland and Livestock Facility Water Quality, Vegetation Management and Wildlife Enhancement Program
- RCD of Monterey County: Salinas River Watershed Invasive Non-native Plant Control and Restoration Program
- Elkhorn Slough Foundation: Ridgeline to Tideline: Water Resource Conservation in Elkhorn Slough
- Save Our Shores: Watershed Protection Program - Annual Coastal Cleanup Day in Monterey County

The first four projects listed above directly address critical water resource needs in DACs, specifically: construction of a new wastewater facility at the San Jerardo farm worker community; water treatment to remove arsenic from the drinking water supply for the community of Castroville; an innovative pilot program to involve DAC community members throughout the region in creating inspection and monitoring programs for their onsite wastewater systems; and a water supply project for the communities of Springfield and Moss Landing Mobile Manor, which has not had potable water since 1986. Each of the other projects listed above provides water resource management assistance to a broader geographic area that also includes DACs (such as farm water quality assistance, rangeland and livestock facility water quality assistance, or Green Gardener training), or alternatively, provides important water resource improvements or environmental enhancements to broader geographic regions that will also benefit DACs

(for example, watershed restoration, wetlands restoration, or elimination of invasive non-native species in waterways).

### **H.3 PROJECT-SPECIFIC IMPACTS AND BENEFITS**

The anticipated impacts and benefits of individual projects in the Greater Monterey County IRWM Plan differ greatly. Some projects will provide local benefits (perhaps critical to a local population), others regional benefits. Some will focus in just one resource area, for example, water supply, while other projects will integrate different resource areas, such as water supply, water quality, environmental restoration, and recreation. However, together and over time, the projects implemented through the IRWM Plan will provide multiple benefits across the entire Greater Monterey County planning region—including water supply, water quality, flood management, environmental enhancement, regional coordination, recreational benefits, and special benefits for disadvantaged communities—while achieving the overarching goals and objectives of the Plan.

The tables below describe the impacts and benefits anticipated from each of the projects included in the Greater Monterey County IRWM Plan. Table H-2 includes the projects that were awarded grant funds through Round 1 of the IRWM Implementation Grant Program, and that are currently in the early stages of implementation. Table H-3 includes the projects proposed for implementation in the IRWM Plan. Note that the impacts and benefits listed in the tables are generally descriptive rather than quantitative, and are intended to give the reader a general understanding of the types of impacts and benefits to be expected. An in-depth impact and benefit analysis will be required for every project that is included in an IRWM grant application package, prior to submitting an IRWM grant proposal to the State.

Since this IRWM Plan is still in the early stages of development and project implementation has only just begun, these lists serve as a general benchmark. Over time, as more and more projects are implemented, the impacts and benefits will be reviewed and this section of the IRWM Plan will be updated as part of the normal plan management activities. These updates will reflect changes to the Impacts and Benefits section from any data gathered, and any additions or changes to the implementation projects listed in the IRWM Plan.

The following tables summarize the impacts and benefits anticipated from each of the 2010-2012 projects included in the Greater Monterey County IRWM Plan.



**Table H-2: Impacts and Benefits: Projects Currently being Implemented through Round 1 IRWM Implementation Grant Funds**

Project Proponent & Project Title	Anticipated Benefits	Anticipated Impacts
City of Soledad: Soledad Water Recycling/Reclamation Project	This project includes completion of design of a recycled water delivery system to both agricultural and recreation areas in and near the City of Soledad. The benefits of this project entail taking the wastewater generated and produced by three DACs and re-routing them to the already built wastewater treatment plant in Soledad, allowing for their treatment and recycling for re-use within the city and surrounding agricultural areas that will benefit from this resource. The project also includes research on the use of recycled water for agricultural uses. Completion of project will enable delivery of recycled water to multiple landscaped areas currently being irrigated with potable water. The project will have the benefit of taking wastewater currently being treated in secondary pond systems to Title 22 recycle water, thus improving the groundwater quality in the Salinas River aquifer.	Possible impacts of this project include dust, noise, and other impacts related to the use of heavy equipment for installation of the conveyance pipes, as well as an increase in greenhouse gas (GHG) emissions.
Castroville Community Services District: Castroville CSD Well 2B Treatment Project	Construction of a new well pump and treatment facility will increase the overall water system capacity for Castroville, achieving the primary benefit of a new water supply facility. Pumping water from the Deep (900-Foot) Aquifer instead of the 180/400-Foot Aquifer will reduce the migration rate of seawater-intruded groundwater in the shallow aquifer. The use of the Well 2B will alleviate the need for a pipeline from the Salinas Valley River Diversion facility. Water quality benefits include: improvements related to protecting, restoring, or enhancing beneficial uses; avoided water treatment costs; avoided wastewater treatment costs; and water quality improvements related to providing water supplies and avoided public safety and health impacts.	Possible impacts may occur from construction activities, including dust, noise, erosion, sedimentation, and increased GHG emissions.
San Jerardo Cooperative, Inc.: San Jerardo Wastewater Project	The proposed project will provide critical public health benefits to the San Jerardo community by both ensuring adequate wastewater treatment systems and by reducing nitrate and 1,2,3-trichloropropane discharge into the underlying aquifer system. It will provide additional air quality benefits as expansion of the system's capacity will reduce noxious odors from the overtaxed ponds. By upgrading the wastewater system, it will help prevent the cycle of contamination and recontamination between the ponds and the underlying aquifer. This is expected to provide water quality benefits, which will extend to the surrounding area, including nearby residential uses. It also includes a potential reduction in the amount of treatment needed for the community's drinking water supply from the nearby well. Water supply benefits include the provision of an alternate source of water for grounds upkeep and year-round soccer field irrigation through the reuse or recycling of treated wastewater, thus reducing water supply demand. Future economic benefits are expected to result from the planning component of the grant, which include the substitute of recycled water for water from the new well site for secondary uses, reducing operating costs to pump, store and maintain the water system. The project will have energy savings by using solar-powered aerators and other solar technology where feasible. Implemented water conservation efforts also potentially have large energy saving implications.	Construction during the project could impact the habitat of two endangered species, the California tiger salamander and the California red-legged frog. Careful biological monitoring during the project will ensure that no endangered species are harmed. To date, the potentially impacted species have not been discovered in the construction zone for the drinking water project, indicating the likelihood that they will not be in the construction zone for the wastewater project.
Elkhorn Slough Foundation: Integrated Ecosystem Restoration in	This project will result in the direct restoration of up to 90 acres of salt marsh in Elkhorn Slough. Over the last 150 years approximately 50% of Elkhorn's marshes have been lost due to human modifications, and their restoration is critical for the long-term health of the estuary. Raising the marsh elevation in lower Elkhorn Slough will reduce the volume of water moving in and out of the estuary each day, decreasing the system's overall tidal prism and helping to reduce erosion of the slough's benthic	Possible impacts from this project include temporary disturbance of habitat from the restoration effort and other construction-related impacts, including increased GHG emissions.

<p>Elkhorn Slough</p>	<p>habitats and tidal creeks. Salt marsh degradation in Elkhorn Slough is associated with the local extirpation of the federally endangered California clapper rail in the 1980s; this project is a first step to recovering critical habitat for this species. Raising the marsh elevation with sediment addition will protect them from drowning due to future sea level rise. The permanent establishment of a native perennial vegetated buffer will reduce agricultural pollution of tidal marshes, increase native grassland habitat, and reduce invasion by non-native upland weeds. The native grass buffer will complete a comprehensive erosion control program for the farm. The establishment of a kayak landing and educational signs will increase public access and enhance recreational use of Elkhorn Slough's waters. As part of a research reserve, the project will enable an ideal laboratory for the study of food safety issues and carbon sequestration in restored tidal marshes.</p>	
<p>Central Coast Wetlands Group at Moss Landing Marine Labs through San Jose State Research Foundation: Water Quality Enhancement of the Tembladero Slough Phase I</p>	<p>During Phase I, CCWG will work with County agencies, agricultural landowners and the community of Castroville for design and permitting of a select set of water quality/wetland management structures. These projects will utilize a variety of water quality management innovations including the treatment train approach (i.e., detention/ sedimentation features, pollutant filtration/biological degradation of pollutants and water polishing areas). This project will provide numerous environmental and social benefits. Vegetating the banks will reduce erosion in the channel and prevent upland sediment from being washed into the Slough. Flooding is a serious risk in this area. The majority of the farms adjacent to the Slough are partially or entirely in the Federal Emergency Management Agency (FEMA) 100-year floodplain, and flooded during the strong storms of 1995 and 1998. This flooding poses a serious food safety risk along with the financial burden to landowners. The project is designed to allow for some flood waters to spread in defined areas (i.e., Floodplain Improvement and Open Space areas), increasing flood management of adjacent areas. These areas will provide an important buffer to farms from flooding and bank erosion. This project will further reduce nutrients and reduce sediment loads to Moss Landing Harbor and Elkhorn Slough. In addition, Castroville will benefit from improved tourist visitation once the slough systems are restored and visitors have greater access to wetland and beach areas.</p>	<p>No negative impacts are expected to occur as a result of this project.</p>
<p>Monterey Bay National Marine Sanctuary, Central Coast Wetlands Group, and the Resource Conservation District (RCD) of Monterey County: Watershed Approach to Water Quality Solutions</p>	<p>This project will take a watershed approach to improve water quality in Santa Rita Creek, an impaired water body located within the Lower Salinas River Watershed. This approach will address impacts from agriculture and urban areas and will incorporate creek restoration while engaging the community. Three Total Maximum Daily Loads (TMDLs) are under development for the area: nutrients, pesticides, and fecal coliform. Though reductions are clearly imminent, it is not yet possible to estimate how the load reductions from this project will compare to the yet to be developed TMDL goals. Manure and associated nutrients and pathogen movement into Santa Rita Creek can be reduced by over 80% through pasture and manure management practices supported by this project. In terms of load reduction, on a poorly managed 2 acre parcel holding 2 horses, pasture and manure management coupled with a vegetated swale could keep nearly 200 lbs of nitrogen and 75 lbs of phosphorous from entering the creek. There are approximately 300 acres of rural residential and ranchette acreage draining to the creek that could host such improvements. Sediment load reductions of as much as 20 tons/acre/year from hillside strawberry farms into an adjacent waterway can be achieved with a combination of furrow alignment, road seeding and furrow cover crops. Based on aerial map and review, there are over 600</p>	<p>No significant negative impacts are expected to occur as a result of this project.</p>

	<p>acres in strawberry production along Santa Rita Creek, approximately half of which are on sloped ground draining directly to the creek with potential for significant soil stabilization opportunities. In addition to improvements in water quality, the restoration projects along Santa Rita Creek will create new and enhance existing community green space by converting what is now an unattractive waterway, bare dirt in some places and overgrown with weeds in others, into a thriving creek and riparian environment that will improve habitat that people can easily access and enjoy.</p>	
<p>University of California, Davis (Granite Canyon Marine Pollution Studies Laboratory): Evaluation of Potential for Stormwater Toxicity Reduction by Low Impact Development (LID) Treatment Systems</p>	<p>This project will evaluate the efficacy of bioswales in reducing the concentrations of contaminants that contribute to stormwater toxicity in the City of Salinas. Looking at four sites in the City of Salinas, the project will: 1) assess toxic effects of stormwater runoff to aquatic organisms prior to treatment by bioswales; 2) evaluate efficacy of bioswales to reduce toxicity to aquatic organisms; 3) determine stormwater and pollutant load reduction through bioswales; and 4) provide data to stormwater agencies, water quality managers, LID engineers, and others to be incorporated into future land-use planning and management decisions. The primary benefit of this project is information leading to aquatic life protection in freshwater streams and the downstream estuary, which provide critical habitat for many commercially important fish species, migratory birds, threatened and endangered species, and other wildlife. Improved water quality is key to maintaining and restoring habitat for area wildlife.</p>	<p>No environmental impacts are anticipated from this project.</p>

**Table H-3: Impacts and Benefits: Proposed Projects Included in the IRWM Plan**

Project Proponent & Project Title	Anticipated Benefits	Anticipated Impacts
California State Parks: Big Sur River Steelhead Enhancement Project	This project will implement the most important recommendations of the Big Sur River Steelhead Enhancement Plan by improving in-stream steelhead habitat and overall water quality in the lower portion of the watershed. The project, although specifically intended to address degraded steelhead habitat, will result in protecting all of the beneficial uses listed by the Central Coast Regional Water Quality Control Board (RWQCB) in the Central Coast Basin Plan. Wildlife and aquatic habitat is protected by moving activities that impact the stream corridor farther away from the river, and by removing invasive species and conducting revegetation activities. Some of the federally or state listed threatened, endangered or special status animal species benefiting from this project are California red-legged frog, south-western pond turtle, yellow-breasted chat, yellow warbler, and white-tailed Kite. The Big Sur River riparian zone in which the project is located is composed of the following three special vegetation community types (California Natural Diversity Database designation): Central Coast Arroyo Willow Riparian Forest, Central Coast Cottonwood-Sycamore Riparian Forest, and Central Coast Riparian Scrub. Migration and spawning beneficial uses are addressed by removing the primary migration barrier on Post Creek and replacing it with a crossing which will allow significantly higher flows on one of two tributaries that support steelhead. Overall water quality improvement will also be obtained by significantly reducing fine sediment input to the channel by upgrading stream crossings and relocating trails, and through bank stabilization. The Big Sur River is specifically called out in the draft South-Central California Coast DPS Recovery Plan as a critical watershed to protect steelhead; this project will be important to the goal of species recovery.	Potential impacts will be minimal but include temporary disturbance of in-stream and/or riparian habitat during the construction and restoration work.
Central Coast Wetlands Group: Coastal Wetland Erosion Control and Dune Restoration	The proposed project will enhance and restore wetland and sand dune ecosystems in central Monterey Bay, and control erosion in salt marshes directly behind the dunes around Moss Landing. The project will benefit water quality and flood control by controlling erosion in wetlands and dunes that buffer the coastline from storm impacts and flooding. Once erosion is minimized the natural wetland ecosystem will flourish and provide a filter for impaired water quality. This project will indirectly benefit water supply by preventing saltwater intrusion into the Salinas Valley Groundwater Basin, which is a major source of water for agricultural and municipal uses. Special status species that will benefit from this project include: California legless lizard, black subspecies ( <i>Anniella pulchra nigra</i> ); sand gilia ( <i>Gilia tenuiflora ssp. arenaria</i> ); Monterey spineflower ( <i>Chorizanthe pungens var. pungens</i> ); tidewater goby ( <i>Eucyclogobius newberryi</i> ); brackish water snail ( <i>Tryonia imitator</i> ); Smith's blue butterfly ( <i>Euphilotes enoptes smithi</i> ); Globose dune beetle ( <i>Coelus globosus</i> ); and the snowy plover ( <i>Charadrius alexandrinus</i> )	Potential impacts will be minimal but include temporary impacts from weed control activities. Impacts will be minimized by installing sediment fencing to prevent erosion while native dune communities are established.
Central Coast Wetlands Group: Development and Evaluation of Climate Change	This project has components of Watershed Enhancement, Water Quality, Habitat Improvement, and Flood Management projects. The following are identified project benefits: Flood management: natural resources preservation and restoration, reduced risk to life and property including agricultural land, and decreased flood insurance costs. Watershed enhancement: enhanced public safety. Habitat improvement: reduced flood risks. Water quality: decreased chance of sea water intrusion.	There are no anticipated impacts with this project as its focus is on data collection and forming a strategy for responding to climate change.

Response Strategies in the Elkhorn Slough, Gabilan and Salinas River Watersheds		
Central Coast Wetlands Group: Ecosystem Condition Profile for the Lower Salinas River Watershed using Level 1-2-3 Framework	This project will use the US EPA’s 1-2-3 Framework to provide cost-effective, scientifically-based, and integrated information on stream ecosystem condition in the Salinas watershed in order to inform management decisions and optimize ecological monitoring activities. The development of a master stream ecosystem condition profile integrates all of the separate efforts to address water quality, supply, and environmental management into one comprehensive plan. Therefore, one of the project’s chief benefits is its comprehensive approach and the integration of information into one overarching, easily accessible, management document. The framework includes recommendations for how to establish Levels of Service (LOS, numeric performance targets) for stream ecosystems. These numeric performance targets will allow our regional partners to periodically assess progress towards meeting environmental/habitat objectives and the appropriateness of associated strategies and measurable objectives. These LOS can be established in each watershed by analyzing results of ambient surveys of stream ecosystem conditions.	There will be no negative impacts because the project consists of primarily research and watershed planning.
Central Coast Wetlands Group, MBNMS, Monterey Bay Aquarium Research Institute, Elkhorn Slough Reserve: Expansion of a Coastal Confluence Water Monitoring System to support the Greater Monterey IRWMP	<i>Water Quality Projects:</i> The region will have the level of water quality data prescribed in the SAM document to effectively quantify small changes in load reduction and help attribute those changes to water quality program implementation. These data will provide the stakeholders with the data necessary to document the long-term capacity of the region to improve water quality impacts of the past century. <i>Watershed Enhancement Projects:</i> We will provide the necessary data to report on the cumulative effects of watershed management efforts necessary to fully adopt a watershed approach to water quality management and load reduction attainment. <i>Habitat Improvement Projects:</i> We will be able to help document the water quality value of habitat restoration projects including erosion control of drainage banks, treatment wetland installation and reestablishment of drainage floodplains. <i>Flood Management Projects:</i> This monitoring will include flow metering that will quantify real time flow measurements that can be made available on line for multiple users. Real time flow at coastal confluence and the resulting loading data will help IRWMP partners to improve their understanding of watershed processes and better model rainfall driven flow patterns of these drainages.	<i>Water Quality Projects:</i> Some regional groups may have concerns regarding the generation of more accurate pollutant loading estimates for these drainages. There have been no negative results of the LOBO data from the Old Salinas River Channel, so we anticipate that these concerns can be addressed through proper interpretation of the generated data. <i>Watershed Enhancement Projects:</i> Will document when programs are not being implemented at a scale to produce significant water quality enhancements to the greater watershed. <i>Habitat Improvement Projects:</i> None. <i>Flood Management Projects:</i> None.
Central Coast Wetlands Group: Northern Gabilan Mountain Watershed Management	The project consists of three phases to restore a sub-watershed within the upper Gabilan watershed, and serve as a model for restoration of watersheds within the Central Coast. One of the project’s chief benefits is its comprehensive approach and the integration of information into one overarching, easily accessible, management document. The project will provide a benefit by synthesizing historically separate management approaches and responsibilities into one cohesive approach. In addition, where data gaps are found, the project will fill them, and as a result, improve decision-making. The intent is to	There will be no negative impacts of Phases I or II because they consist of primarily background research, watershed planning, engineering plans and permitting. The potential for impacts exists in Phase III during the

Project	provide an “early warning system” to reduce surface water pollution, protect natural ecosystems, and to direct activities to areas that will enable natural systems, such as percolation. Not only will the project result in standards, policies and criteria, and a master site plan, it is a step towards load reductions (helping reach TMDL goals), enhancements to the ecosystem, and the public’s greater knowledge and appreciation of their watershed. Phase II and III will result in multiple watershed benefits. One main outcome of this project is to improve water quality. Additionally this project seeks to create a public access trail that will provide recreational opportunities throughout the sub-watershed and may aid in reducing greenhouse gas emissions by providing bike access for commuters to downtown Salinas.	construction work; however, those impacts cannot be quantified without knowing the types and locations planned.
Central Coast Wetlands Group: Implementation of the Moro Cojo Slough Management and Enhancement Plan – Restoration of the Upper Slough	The project will involve the restoration of 120 acres of the Moro Cojo Slough containing tidal and brackish water marsh (a State marine reserve) that receive fresh water inputs from agricultural lands above. Many of the problems that are now associated with most of California’s waterways stem from the fact that natural watershed functions which once served to maintain high water quality and wildlife – by filtering pollutants, recharging aquifers, providing flood storage capacity, and providing habitat – have been disrupted. By impounding water that is now allowed to flow off the land into the ocean, we will allow it to percolate into the substrate and eventually into the aquifers, reversing a 50-year trend of seawater intrusion into the coastal aquifers. Even the most persistent pesticides break down more rapidly in shallow marsh habitats through anaerobic bacterial degradation and photo-degradation from sunlight. Ponds will allow for the finest sedimentary particles (which transport pesticides, metals, and other pollutants) to settle out of the water column, preventing the concentration of these materials at single locations such as the Moss Landing Harbor. Restored wetland vegetation will clean water by removing nutrients. Microbial processes in wetland substrates will break down nitrates into harmless forms of nitrogen through denitrification. Threatened or endangered species that should benefit from the completion of this project include: Bells vireo ( <i>Vireo bellii</i> ), red-legged frog ( <i>Rana aurora draytonii</i> ), Santa Cruz long-toed salamander ( <i>Ambystoma macrodactylum croceum</i> ), California tiger salamander ( <i>Ambystoma californiense</i> ), tidewater goby ( <i>Eucyclogobius newberryi</i> ), and the brackish water snail ( <i>Tryonia imitator</i> ).	Possible impacts could include short-term, site-specific impacts related to site grading and construction, loss of some agricultural land production, and the associated revenue.
Central Coast Wetlands Group: Study of Environmental Services from Nutrient Reducing BMPs	This project is intended to fill existing economic and ecological gaps in knowledge about select nutrient load reducing BMPs, supporting current conservation programs, and to explore innovative Payment for Environmental Services (PES) potential. Tasks include an ecosystem service assessment to identify the location and size of existing nutrient reducing BMPs; nutrient reduction research to address gaps in the understanding of the effectiveness of selected BMPs at load reduction; ecosystem service valuation to economically assess the multiple benefits of BMPs; and an ecosystem services analysis to determine if PES is feasible. In many cases, growers can only receive funding assistance for BMPs that have been proven effective. This project will explore the effectiveness of two BMPs that growers may be interested in installing. Efforts that lead to the better understanding and more widespread implementation of the most effective BMPs will result in water quality benefits. In addition to the benefit of BMP implementation, gaining an understanding of the economic value of the environmental services that many different BMPs provide can help with grant and project budget justifications to make implementation projects more competitive. Finally, PES is an innovative mechanism for improving water quality, which if feasible can have incalculable benefits for this region and others.	There may be some impact from the installation of BMPs, depending on the type of BMP. Any BMP that involves dirt-moving has the potential to release small amounts of sediment into the air or water. These impacts are expected to be minimal, temporary, and far outweighed by the project benefits.

Central Coast Wetlands Group: Water Quality Enhancement of the Tembladero Slough Phase II	During Phase II of this project, 20 acres in total (approximately six projects) will be constructed based on the plans from Phase I that support and integrate the multiple objectives of the IRWM Plan, emphasizing urban and agricultural water quality enhancement, flood management, habitat restoration and support of various watershed planning and permit processes. This project will support numerous IRWM Plan objectives including watershed enhancement, improved water quality, flood protection, and habitat improvement, as well as an enhancement of public open space and urban/agricultural boundaries. The construction of these systems will integrate numerous efforts that have occurred with local landowners together to address water quality, supply, and environmental management into one comprehensive project. The project will provide a benefit by synthesizing historically separate management approaches and responsibilities into one cohesive approach. Main outcomes of this project are to improve water quality, help to meet various regulatory objectives, create wetland habitat, and reintegrate the community of Castroville with its coastal wetland resources. The project proponents anticipate that Castroville residents will embrace the multiple values made evident through this Phase II project and will direct county leaders to adopt wetland restoration objectives as primary criteria for the redevelopment of the community of Castroville.	Impacts include the following: resources directed to this project will not be available for other regional needs; there may be some loss of low-quality agricultural lands for construction of these systems; construction phase GHG emissions will occur, and will be mitigated (through biofuels, carpooling, sequestration).
City of Salinas: Integrated Industrial Wastewater Conveyance and Treatment Facility Improvements	This project will include new gravity sewers with capacity to collect more of the City’s industrial wastewater and convey it to the Industrial Wastewater Treatment Facility (IWTF), upgrades to the IWTF to treat increased industrial flows (expanded electrical system and aeration treatment and related upgrades), and a system to filter the IWTF effluent through soil at the IWTF. Project benefits include improved water resources management, job creation through opening of new industries, improved markets for local farmers, and enhanced energy efficiency (and hence lower GHG emissions) at the Industrial Wastewater Treatment Facility. Depending on the final selected water reuse scheme, groundwater over-drafting and /or seawater intrusion would be reduced.	Potential impacts would be transitory ones such as dust, noise, stormwater runoff, and traffic congestion associated with construction. The City would mitigate those impacts through normal City requirements such as enforcement of noise restrictions, traffic control measures, and a project stormwater pollution prevention plan.
City of Salinas and Monterey Regional Water Pollution Control Agency: Dry Weather Runoff Diversion Program	For Phase 1, the benefits include both water supply and water quality. The diverted water will assist MRWPCA in responding to water demands from its agricultural customers. Routing less urban runoff to the Salinas River will decrease release of potentially deleterious constituents—oil and grease, nutrients, trace metals and synthetic organics, and pathogenic organism. For Phase 2, the chief benefit will be to determine if more stormwater diversion is feasible and quantify potential diversions.	For Phase 1, the only impact on water supply would be slightly decreased flow to the Salinas River in the dry season. The project will have minor construction impacts but work will take place in an area where surface disturbances have occurred for over 70 years. The City will require that all work be performed in conformance with appropriate environmental controls such as stormwater pollution prevention and emissions controls on construction equipment. The Phase 2 study will have de minimis impacts on the environment.
Delicato Family Vineyards: San	The project consists of lining canals and reservoirs at the San Bernabe Vineyard. Significant water loss due to percolation results in increased water pumped from the well field, and significant increase in	Impacts could include temporary, short-term, and site-specific impacts

<p>Bernabe Lining Project</p>	<p>energy usage. Completion of lining would result in immediate benefits of reduced water usage and reduced energy consumption. With past lining installations, the vineyard managers have seen a 99% reduction in water loss which results in reduced energy use, both electrical and diesel, due to reduced pumping both at the wells and lift stations. Lining the structures not only prevents percolation and required pumping, but can provide habitat for waterfowl 365 days per year. All the structures are fenced to prevent accidental entry by hooved animals such as deer and wild pigs, but permit the entry of waterfowl and small species. In addition, linings allow the pumping of water during non-peak hours, reducing power demands to the grid; and in most cases, the water is gravity flowed into the system with no power demand.</p>	<p>associated with installation of the linings.</p>
<p>Ecology Action: Monterey Bay Green Gardener Training &amp; Certification Program</p>	<p>The Monterey Bay Green Gardener Certification Program provides bilingual, hands-on training in ecological landscaping methods for landscaping industry professionals, public agency landscape maintenance staff, and home gardeners. Benefits of the Green Gardener Certification Program are an increased technical capacity within the local landscape industry to realize the goals of the Greater Monterey County IRWM Plan relating to enhancing water supply, protecting water quality, improving stormwater retention and flood control, and fostering stewardship of watersheds and natural resources. The Green Gardener Program also serves as a conduit for government agencies to communicate new ordinances, regulations, and conservation incentives to an audience that may be hard to reach due to language and cultural barriers. Ecological landscaping practices also reduce the use of fossil fuels and improve air quality through reduced mowing, blowing, and hauling of green waste. Public health is improved via reduced exposure to potential carcinogens in the urban landscapes where people live, work, and play.</p>	<p>There are no negative impacts associated with this project.</p>
<p>Elkhorn Slough Foundation: Ridgeline to Tideline – Water Resource Conservation in Elkhorn Slough</p>	<p>“Ridgeline to Tideline” is a comprehensive approach to addressing water resource issues in an estuarine watershed. The project area encompasses 427 acres of Elkhorn Slough and uplands set in a 4,000-acre block of protected lands. The three phases of this work include: 1) increasing tidal range and circulation in part of the Slough with consistently poor water quality and greatly reduced estuarine function, coupled with restoration of an adjacent upland buffer, 2) acquiring two adjacent farmland properties that are chronic sources of Slough degradation, and 3) re-contouring and stabilizing their steep eroding slopes and restoring native vegetation. Benefits include improved estuarine water quality, improved flood protection of a railroad and roads, reduced offensive odors, decreased sediment, nutrient, salt and chemical pollution of surface and groundwater, decreased groundwater pumping, increased groundwater recharge, increased estuarine, freshwater wetland and upland wildlife habitat, increased listed species habitat, increased carbon sequestration, and reduced need for mosquito control.</p>	<p>Possible impacts include temporary construction-related effects, reduced farmland acreage and associated tax revenue.</p>
<p>Marina Coast Water District: Recycled Water Element of the Regional Urban Water Augmentation Project</p>	<p>The Recycled Water element of RUWAP is a local water supply source for the MCWD service area and potentially the Monterey Peninsula that will provide a non-potable offset to potable water currently used for irrigation. The Recycled Water element of RUWAP will contribute to the following regional benefits and beneficiaries:</p> <ul style="list-style-type: none"> <li>• Development of a reliable, high quality water supply for a large Monterey County region;</li> <li>• Optimization of the use of current water supply resources within Monterey County at a relatively low cost;</li> <li>• Improved water supply reliability through diversification of the developed water supply</li> </ul>	<p>All of the environmental impacts that would result from implementation of the Recycled Water element of RUWAP are considered less than significant, or will be reduced to less than significant with mitigation. The following was noted in the environmental documentation: Construction and operation of the project</p>



(RUWAP)	<p>portfolio;</p> <ul style="list-style-type: none"> <li>• Delivery of water to the Ord Community, allowing implementation of the Fort Ord Base Reuse redevelopment plan;</li> <li>• Creation of new jobs for construction, implementation, and operation and maintenance of the facility and associated appurtenances, contributing to economic sustainability of the region;</li> <li>• Reduced nutrient discharge to Monterey Bay National Marine Sanctuary;</li> <li>• Reduced groundwater pumping in support of Seaside Groundwater Basin Adjudication requirements; and</li> <li>• Sustainment of local water resources by putting this resource to its highest and best use.</li> </ul>	<p>would require grading, excavation, and other activities that could result in loss or disturbance to special-status species and their habitats. The potential exposure of employees and public to hazards due to discovery of unknown unexploded ordnance during pipeline trenching is a potentially significant impact. Construction activities and operation have the potential to affect air quality, which will be mitigated by efforts to reduce fugitive dust. The project proponent anticipates no significant impacts related to hydrology and water quality, and no significant negative impacts related to water supply.</p>
Monterey Bay Sanctuary Foundation: Making Monitoring Count	<p>This project will implement the tracking system developed to inventory projects designed to address the goals of improved water quality, water supply, flood control and environmental protection outlined in the IRWM Plan. The project will ultimately benefit the IRWM Plan process because the RWMG will have better knowledge of where practices are being implemented and how effective they are at their intended purpose. An inventory of the projects mapped on a Google interface for easy access and contact information will be created. Tools will be developed that will determine pollutant load reductions and potential for meeting beneficial uses. There will be multiple benefits associated with these tracking and assessment tools that may improve habitat and increase efficiencies. This project will also help to direct future efforts of the MBNMS Water Quality Protection Program by implementing the strategies outlined in the MBNMS Regional Monitoring, Data Access, and Interagency Coordination Action Plan. It addresses the need for a continuous and coordinated strategy for regional monitoring of water quality, compilation of data and effectiveness of practices. It is a goal of the MBNMS to make this information more accessible to the public, resource managers and especially researchers with the scientific and technical expertise to tackle unanswered questions related to effects of runoff into fresh water systems and the marine environment. In addition, further data analysis will help to determine where the IRWM process can focus environmental protection efforts.</p>	<p>No negative impacts are expected.</p>
Monterey County Public Works: Las Lomas Drive Storm Drain Improvements Project	<p>The project proposes to improve 0.25 miles of Las Lomas Drive. The project involves constructing new curb, gutter and sidewalks, Class II bicycle lanes, storm drains, a water treatment system, and rehabilitating the existing roadway. The project will provide water quality benefits by incorporating design features that will result in a reduction of pollutants and sedimentation prior to discharge into the Elkhorn Slough. Additionally, these improvements will capture and manage stormwater runoff, and improve and implement flood management thus adequately protecting and reducing risk to life and property to flooding.</p>	<p>The project will be constructed during the dry season and may have a short-term impact of traffic delays during the construction phase that will mostly affect the residents of Las Lomas Drive. The project may have potential environmental impacts in terms of air quality, biological resources, hydrology</p>

		and water quality, and noise. However, mitigation measures have been identified to reduce these impacts, including: dust control measures; a spill abatement plan; preparation of a Stormwater Pollution Prevention Plan that includes BMPs to control runoff, erosion and sedimentation from the site during grading activities; and noise reduction measures.
Monterey County Redevelopment & Housing Office: Well Replacement and Pipeline – San Lucas Water District	Since March 2011 all customers of the Water District have been on an indefinite “Do Not Drink” order from the Monterey County Division of Environmental Health due to excessive levels of nitrates in water being pumped from the District’s single well. The project will replace the existing well with a new production well. Project benefits include: the lifting of the “Do Not Drink” order issued by the Monterey County Health Department in March 2011; enhancement of the security of the public water supply by providing a newly constructed well to serve as the District’s primary water source, while retaining the existing well as an emergency backup source (the District presently does not have an emergency back-up water source for fire protection in the event the existing well has a mechanical failure); ability to approve new water service connections for planned affordable housing projects, something that is much needed in this overcrowded farmworker community; and bringing the Water District’s wastewater treatment facility into compliance with its Discharge Permit, which will further allow the District to approve new sewer service connections for the above reasons.	Potential impacts include possible temporary, short-term, site specific inconvenience to portions of the existing agricultural operation on the property from dust, erosion, sedimentation, or construction equipment during construction of the test well, test pumping and sampling of the test well, construction of the production well and pipeline, and development pumping of the production well.
Monterey County Water Resources Agency: Aquatic Invasive Species Inspection Project	This project benefits water supply by protecting the drinking water infrastructure that is present in Lake Nacimiento from infestation by quagga and zebra mussels, and protecting the Salinas River system from invasion of aquatic invasive species (AIS). Once introduced into a waterway, the mussels reproduce prolifically. If just a few zebra or quagga mussels get into a fresh water system, they could multiply into hundreds of thousands, within months, and eventually decimate native aquatic populations, change water clarity, increase toxic algal blooms and undesirable vegetation, cripple water system infrastructure, including critical agricultural water delivery systems, disrupt recreational boating, and can potentially cost state and local water and recreation agencies and the agricultural industry millions of dollars annually in monitoring, maintenance, containment, infrastructure restoration, and eradication efforts. In addition, it is likely that the recreational value of the lakes would be greatly reduced if AIS were found in either Lake.	There are no expected negative impacts.
Monterey County Water Resources Agency: Coastal Dedicated Monitoring Well Drilling	Twelve dedicated monitoring wells will be drilled under the oversight of a Professional Geologist. The four-inch diameter wells will be drilled using sonic drilling method that allows discrete evaluation of geology to determine where well perforations will be placed. The wells will be strategically placed in Monterey County right-of-way locations with the goal to fill water quality and water level data gaps in front of and behind the 2009 500 mg/L chloride seawater intrusion fronts for the Pressure 180-Foot and Pressure 400-Foot Aquifers. An important benefit of this project is that it will fill data gaps for continued comprehensive seawater intrusion monitoring. The project will also enable coastal water	Possible impacts associated with the drilling of the wells may occur.

	users, urban and agricultural, to understand potential impacts to their source water. In addition, the project will facilitate strategic planning for alternative water solutions by providing information about the health of the groundwater aquifers.	
Monterey County Water Resources Agency: Granite Ridge Regional Water Supply Project	MCWRA is proposing to implement the Granite Ridge Regional Water Supply Project to alleviate existing water supply and water quality deficiencies in the Granite Ridge area of northern Monterey County. The project will provide significant benefits in water supply reliability, increased water quality, and enhanced local fire protection. All parcels within the zone of benefit are susceptible to water shortages or loss, and will receive an increased level of water supply reliability including: greater supply reliability in the alluvial aquifer material of the greater East Side subarea; and greater reliability provided through the utilization of two wells, one for normal service, and one as a backup in the event the primary well is out of operation. There are two water quality issues in the Granite Ridge region: nitrate and arsenic concentrations that exceed Federal drinking water standards. Water quality where the supply wells will be located is generally good; all identified customers within the zone of benefit will obtain a uniform level of access to an improved water quality benefit. In addition, the project will improve the fire protection of the region and may result in reduced fire insurance rates for some parcels.	Impacts could include temporary, short-term, and site-specific impacts from dust, erosion, sedimentation, or construction equipment during construction of the water supply system. Possible impacts could also include impacts to air quality related to site grading and operation of heavy equipment, and increase in GHG emissions.
Monterey County Water Resources Agency: Salinas River Fisheries Enhancement Project	The implementation of the migration monitoring component of this project will provide a flow regime for steelhead trout in the Salinas River. This flow prescription calls for flows to be released from Nacimiento and San Antonio Reservoirs that are aimed at providing suitable habitat in the lower Nacimiento River for steelhead rearing, suitable conditions in the Salinas River for upstream migration of the adult steelhead, outmigration of steelhead smolt, and juvenile steelhead passage to the Salinas River Lagoon. It will also provide a procedure to improve water quality and fish habitat conditions in the Salinas River Lagoon by maintaining a fresh water flow into the Lagoon. The implementation of the habitat monitoring component means that water quality parameters that are critical for fish survival will be monitored with a new level of consistency. While not a direct goal of this project, the increased releases from the reservoirs and resultant river flows will force greater groundwater recharge, improving groundwater quality. The facilities and water quantity will be monitored to ensure that conditions exist for safe steelhead migration. The implementation of the population monitoring will evaluate steelhead response to management actions through behavioral parameters or abundance parameters.	There are no expected negative impacts.
Monterey County Water Resources Agency: Salinas River Flood Risk Reduction Project	The project will fund the preparation of a combined NEPA/CEQA document for the Salinas River Flood Risk Reduction Project, which allows channel maintenance activities on the mainstem of the Salinas River. Benefits may include reduced flood risk to public infrastructure and land adjacent to the Salinas River and select tributaries including highly productive agricultural land, homes, utilities and infrastructure such as bridges and wastewater treatment plants. This would have a direct benefit on the local economy as agriculture plays a key role in the local economy. Benefits also may include long-term sediment reduction and decreased in-stream erosion, increased aquifer recharge, improved fish and wildlife habitat and passage, decreased quantities of non-native invasive species, natural resources preservation and restoration of the floodplain. Additionally the program could offer enhanced public safety by reducing the risk to life and property.	Possible impacts could include short-term, site-specific impacts to air quality related to site grading and operation of heavy equipment, increase in greenhouse gas emissions, and could result in a loss of riparian and/or wetland acreage.

<p>Monterey County Water Resources Agency: Test Well for Regional Desalination Project – Slant Well</p>	<p>In response to the Seaside Basin overdraft and to address the 2006 State Board’s Division of Water Rights Cease and Desist Order to Cal-Am to reduce its Carmel River well water withdrawals, an alternative “Regional Water Project, Phase I” was proposed. This alternative proposed using vertical and slant wells to produce and treat brine water by reverse osmosis, and then deliver the potable water for use on the Monterey Peninsula to remove the State Board Cease and Desist Order. This proposal would fund the slant test well drilling component of the abovementioned project to determine project feasibility. The proposed project includes four sets of monitoring wells to be located at the project site within about 200 feet of the surface of the slant well. The Monterey Bay Regional Desalination Project will supply water to meet the immediate regulatory needs of the Monterey Peninsula and the demands of the Ord Community. Specifically, the project will: meet the requirements of the State Water Resources Control Board (SWRCB) Order 95-10 and offset the reduced diversion from the Carmel River; respond to the adjudication of the Seaside Groundwater Basin and provide additional supply necessary to offset reductions in allowable pumping from the Seaside Groundwater Basin; and meet the approved redevelopment needs of the Ord Community as documented in the Fort Ord Reuse Plan. In addition to meeting regulatory requirements for water supply, the desalination project will help reduce and remediate seawater intrusion, which is an ongoing water quality issue in the region.</p>	<p>Possible impacts may include construction-related issues including short-term specific impacts related to site grading and construction. Construction-related impacts may include increased traffic and noise, and increased GHG emissions.</p>
<p>Nacimientto Regional Water Management Advisory Committee: Interlake Tunnel between Lake Nacimientto and Lake San Antonio</p>	<p>The project is to build an interlake tunnel between Lake Nacimientto and Lake San Antonio. The Nacimientto–San Antonio Interlake Tunnel Project will ensure the reliability of the water supply, conserve additional water, and assist with flood control. Tens to nearly a hundred thousand AF of water could be captured (the 2011 rain year was estimated at 33,000 acre-ft) and stored for use in dryer months or years. This additional water supply would benefit all downstream users throughout the Salinas River Basin for agricultural, industrial, commercial, recreational and drinking water purposes. The water is conveyed via the Salinas River, whose flow is directly over the groundwater basin and is the primary source of recharge, thereby benefiting those downstream needs such as groundwater recharge and the resistance of seawater intrusion. The water from the reservoir will be used to naturally replenish the 180 and 400-Foot Aquifers below the Salinas Valley. Thus the water would increase the water supply by capturing tremendous amounts of rainwater, improve the overall water quality (less reliance on recycled water), and increase the recreational opportunities at both reservoirs with higher water levels. Water released from the Nacimientto and San Antonio Dams provides a consistent habitat for endangered fish such the steelhead trout, which are alleged to have once inhabited the area. An increase in stored water at both Lake Nacimientto and San Antonio will ensure more stable habitat. In addition, the Nacimientto–San Antonio Interlake Tunnel Project will facilitate the transfer of water from Lake Nacimientto to Lake San Antonio. It will allow for more varied operational dynamics and flood control options as the tunnel provides another outlet in which to store water during a storm event.</p>	<p>Possible impacts may include construction-related issues within the lakebeds including short-term specific impacts related to site grading and construction. Construction-related impacts may include increased traffic and noise. Additionally, a temporary increased turbidity with the reservoir bodies may affect water quality. Longer term aesthetics of the intake structures may degrade the natural beauty of the manmade reservoirs.</p>
<p>Pajaro/Sunny Mesa Community Services District: Springfield Water Project</p>	<p>The proposed project will benefit the disadvantaged community of Springfield and the Moss Landing Mobile Manor by providing them with an increase in potable water supply. The Springfield system is currently on a demand basis without storage. The project includes providing the system with sufficient storage for both Struve Road and the Moss Landing Mobile Manor. Also the proposed project will benefit the water system by reducing the pump cost. The well will no longer be on a demand basis and will have time to shut off and turn on when the tanks call for water, not every time the user opens the</p>	<p>The Springfield water system will be impacted by short-term construction. The community will be facing the inconvenience that construction crews bring: noise, traffic, and momentary water shut off.</p>

	water faucet. In addition, the only access to the Springfield water system is through dirt roads. During the rainy season it is impossible to drive on the muddy roads, and the well site must be checked by foot. The well operator must walk to the well site daily until the roads have dried. The proposed well site is accessible all year long. This will benefit the system by reducing operation costs. The project will benefit all the Struve Road community by providing potable water and reducing the travel time and expense of purchasing bottled water for drinking and cooking. The community will have potable water in their homes, something this community has not had since at least 1986.	
RCD of Monterey County: Livestock and Land	The purpose of this program is to achieve immediate and lasting reductions in nutrient, sediment and pathogen pollution to surface and ground waters and enhance wildlife habitat through implementation of BMPs on livestock facilities and rangelands in the Greater Monterey County IRWM region. The proposed program utilizes an incentives-based approach to achieve the cultural change needed for livestock facilities to voluntarily adopt management measures that improve the healthy functioning of watersheds. This project has water quality, watershed enhancement, habitat improvement, and water conservation benefits. Benefits include strengthening of public/private partnerships to address environmental challenges, reduced surface water nutrient and bacteria concentrations (improved water supply quality), improved fish and wildlife habitat with emphasis on stockpond-associated amphibians (such as the California red-legged frog and tiger salamanders), animal health and public safety, site-specific improved flood protection, and educational opportunities.	Possible impacts are extremely localized temporary soil disturbance and noise associated with site preparation or grading.
RCD of Monterey County: Monterey County Farm Water Quality Assistance Program	The RCD of Monterey County, in close partnership with University of California Cooperative Extension Crop Advisors and USDA Natural Resources Conservation Service, will provide a bilingual on-farm erosion, irrigation, and nutrient management evaluation program for Monterey County farmers. The main intended benefits of this project are more efficient use of agricultural irrigation water and nutrients, improved water quality and availability downstream for other beneficial uses in the subject watersheds, and reduced grower input costs relative to crop productivity and quality. Additional potential benefits include: decreased sedimentation of downstream waterways, wetlands, and structures; decreased reliance on imported water; reduced pumping costs; decreased groundwater overdraft; reduced surface water nutrient and bacteria concentrations; and improved fish and wildlife habitat.	Potential project impacts include: short-term, site-specific impacts related to site grading and construction, loss of summer drainage flow to downstream water users, and summer in-stream flow loss due to reduced irrigation runoff.
RCD of Monterey County: Salinas River Watershed Invasive Non-native Plant Control and Restoration	The project proposal is for the first 3-year stage of treatment (of a 10+ year program) and will target <i>Arundo spp.</i> and <i>Tamarix spp.</i> and other invasive weeds in the channel, floodplain and terraces of the Salinas River between King City and Soledad. All non-native invasive weeds present in these areas will be treated using a combination of physical, chemical and biological techniques, and selected sites will be revegetated with native plants as appropriate to the site (considering flood risk, natural recruitment potential, and landowner interest). Anticipated benefits include: enhancement of riparian habitat, increased aquifer recharge due to reduced evapo-transpirative demand from removed non-native plants, erosion prevention, improved surface water quality and reduced flood risk from sediment reduction, stream shading and temperature improvements for steelhead, enhanced navigability and fish passage, public safety and food safety from reduced flood risk, decreased flood insurance costs, and education opportunities for youth and land managers.	Possible impacts are primarily short-term, site-specific impacts related to mechanical and chemical weed treatment, namely: noise, possible spray drift on adjacent non-target vegetation, and soil disturbance from heavy equipment. All of these are considered in the Programmatic Mitigated Negative Declaration for CEQA currently under public review.
Rural Community Assistance	The Greater Monterey Bay Disadvantaged Community Wastewater Management Pilot Program will form a collaboration of experts, students, community leaders and local government to implement an	Possible impacts may include the discovery of failed systems in need of

<p>Corporation: Greater Monterey Bay Disadvantaged Community Wastewater Management Pilot Program</p>	<p>Inspection and Monitoring program of community onsite wastewater systems. The program will create an on-going operation and maintenance program, including ground water monitoring, for selected disadvantaged communities that are served by individual septic tanks that may not afford traditional sewer systems. Possible benefits include decreases in contaminated groundwater, more sanitary living conditions for community residents, decreases in environmental health hazards, and overall improvement to water quality and conservation. An additional benefit is the local job creation of two certified Service Providers. Economic benefit will also occur for local plumbers and excavators. Lastly, partnerships with the two universities will increase the community presence for both schools, provide the students with hands-on projects and decrease the cost to the DACs in implementing the project.</p>	<p>replacement or immediate repair. This may pose an increased financial hardship for community residents.</p>
<p>Save Our Shores: Watershed Protection Program – Annual Coastal Cleanup Day in Monterey County</p>	<p>At a minimum of 30 sites annually, 2,000 volunteers will remove and prevent 10,000 pounds of trash from entering the MBNMS. River cleanups will result in improved fish passages due to the removal of debris. Beaches will be cleaner, which will be more inviting for tourists and safer due to less glass and other sharp objects in the sand. The annual cleanup will protect endangered species by preventing dangerous trash from entering coastal waters. In particular, the MBNMS is home to four species of endangered turtles as well as the endangered California sea otter, which can easily mistake plastic bags for jellyfish. Save Our Shores has prevented 27,000 plastic bags from entering the ocean in the past four years through the annual coastal cleanup days. In addition, recreational activities that take place daily in the Sanctuary such as kayaking, surfing and swimming will be more enjoyable due to less trash in the water.</p>	<p>No negative impacts are expected.</p>

#### **H.4 THE INTANGIBLE BENEFITS OF IRWM PLAN IMPLEMENTATION**

The benefits of this IRWM planning effort go well beyond the on-the-ground water resource and environmental benefits that will accrue through the implementation of projects. One of the great benefits of the IRWM planning process is that it provides water resource managers with a *framework* for effectively integrating water management programs and projects within the region and for achieving regional water resource goals. Through the IRWM planning process, the RWMG endeavors:

- To improve and maximize coordination of individual public, private, and non-profit agency plans, programs and projects for mutual benefit and optimal gain within the region;
- To help identify, develop, and implement collaborative plans, programs, and projects that may be beyond the scope or capability of individual entities, but which would be of mutual benefit if implemented in a cooperative manner;
- To foster coordination, collaboration and communication between stakeholders and other interested parties, to achieve greater efficiencies, enhance public services, and build public support for vital projects; and
- To realize regional water management objectives at the least cost possible through mutual cooperation, elimination of redundancy, and enhanced regional competitiveness for State, Federal, and private sources of grant funding.

The IRWM planning process fosters a spirit of positive collaboration among public, private, and non-profit agencies and organizations within the region, promotes communication, encourages new partnerships and programs, and ultimately results in increased efficiencies and cost savings. These more “intangible” benefits of the IRWM planning effort should be recognized equally alongside the numerous, significant, on-the-ground environmental and water resource benefits of project implementation.