

Appendix 11
Tier I Projects
Impacts and Benefits

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**Appendix 11
IRWM Tier I Projects
Benefits and Impacts**

Project Title	Summary of Project Benefits	Summary of Project Impacts
51st St. Headwater Canyon Restoration Project	(1) Improved water quality throughout the watershed and San Diego Bay; (2) improved biological diversity (3) enhanced public safety; and (4) improved access to the creeks and bay (5) community awareness about and positive behaviors around non-point source pollution.	Negative project impacts will be identified as part of the planning process and mitigated wherever possible.
Acquiring Willow Glen Farm	Conservation of an additional 4 acres of lush riparian habitat and watershed lands adjacent a sustainable organic farm within the Sweetwater Watershed; removal of invasive plant species to encourage native wetland plant species that will increase water recharge, improve filtration quality, and decrease erosion within the Sweetwater River watershed.	None anticipated.
Campo Creek Erosion, Habitat and Groundwater Recharge Improvement.	(1) Improve 7000 feet of local stream bed and would reduce sediment transport to over 5 miles of stream bed and downstream valley. (2) Improve the groundwater recharge in the area of the project which ultimately improves the water table for 2000 acres of downstream alluvial aquifer. (3) Improve the flora and fauna habitat in a critical area where wildlife crosses between Mexico and the Laguna Mountains to the North. (4) Improve data collection.	There would be some dust generated and soil disturbance during the project implementation but it would not last long.
Campo Creek Watershed Groundwater Management Plan	The plan would include sufficient studies to determine the sustainability level of the various types of aquifers contained in the watershed. It should determine what level of water development is acceptable to the stakeholders and provide mechanisms to ensure sustainability over the long term even with the advent of Climate Change. The Plan should help protect the water table levels, the water dependent biology and water quality.	None anticipated.
Capture and Reuse Storm Water Runoff from Visitor Parking Lot project	The project will enable the Park to capture storm water from the visitor's parking lots and reuse this water for irrigation. By capturing and reusing the storm water, the Park will be able to annually reduce its use of potable water by 250,000 gpd.	Some disruption due to construction will occur and some on grounds traffic disruption is possible. Careful monitoring of BMP's during construction will be necessary.
Carlsbad Desalination Project Local Conveyance	(1) Reliable water supply. (2) Higher quality drinking water. (3) Acquisition of land for public purpose. (4) Restore and enhance the marine environment. (5) Generate economic activity. (6) Facilitate conservation and recycling. (7) Reduce health risks. (8) Equitable access to benefits. (9). Avoided infrastructure cost	The City of Carlsbad certified the EIR for the Project on June 13, 2006. The RWQCB issued an adopted NPDES Permit on the Project on August 16, 2006. There will be no significant impacts after implementation of required mitigation and compliance with the NPDES Permit conditions.
Central San Diego Formation Groundwater Desalination Demonstration Project	The project has benefits such as improving salt contents of the groundwater basin, developing new municipal water supply and reliable local water supply, reducing demand for imported water and reducing regional electrical power consumption.	None anticipated.
Chollas Creek Watershed Opportunities Assessment	(1) Improved water quality throughout the watershed and San Diego Bay; (2) Improved biological diversity (3) Enhanced public safety; and (4) Improved access to the creeks and bay.	Negative projects impacts will be identified as part of the planning process and mitigated wherever possible.
City of San Diego Green Mall Porous Paving and Infiltration, Phase 1	Reduce urban runoff pollution through source control (i.e., pollution prevention through education and outreach), runoff volume reduction, and treatment control.	Excessive groundwater infiltration has the potential to damage street, sidewalk and building improvements. To address this potential concern, the City's draft Strategic Plan for Watershed Activity Implementation includes interim guidelines for site selection and sizing of infiltration planners and pervious concrete or porous asphalt paving. These guidelines will be used to help avoid potential negative impacts, such as undermining the foundations of nearby structures with too much groundwater. There is some concern that the pollutants infiltrated by the porous paving may adversely affect groundwater resources. To address this potential concern, the City's interim infiltration guidelines also identify conservative infiltration restrictions to protect any potential groundwater resources.
City of San Diego Green Street Porous Paving and Infiltration, Phase 1	Reduce urban runoff pollution through source control (i.e., pollution prevention through education and outreach), runoff volume reduction, and treatment control.	Excessive groundwater infiltration has the potential to damage street, sidewalk and building improvements. To address this potential concern, the City's draft Strategic Plan for Watershed Activity Implementation includes interim guidelines for site selection and sizing of infiltration planners and pervious concrete or porous asphalt paving. These guidelines will be used to help avoid potential negative impacts, such as undermining the foundations of nearby structures with too much groundwater. There is some concern that the pollutants infiltrated by the porous paving may adversely affect groundwater resources. To address this potential concern, the City's interim infiltration guidelines also identify conservative infiltration restrictions to protect any potential groundwater resources.

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City of San Diego Municipal Rooftop Rain Harvesting, Phase 1	(1) Reduce urban runoff pollution by reducing the volume of runoff entering the storm drain system through rain water capture and use, (2) Contribute to water conservation by using rainfall instead of potable water for landscape irrigation, (3) Provide information that can be used to launch similar rain barrel programs throughout the City.	None anticipated.
City of San Diego Parklands Recycled Water Retrofit Program and Distribution System	Recycled water and its distribution can provide significant benefits to the San Diego region. Foremost, using recycled water offsets potable water usage - reducing reliance on imported water and increasing local water supply through an alternative water source for non-potable water needs. In addition to adding a critical water supply, wastewater management is an important benefit. The more recycled water is used from the North City Water Reclamation Plant, the less wastewater needs to be treated at the Point Loma Treatment Plant and eventually discharged into the ocean.	None anticipated.
City of San Diego Recycled Water Infill Projects	Recycled water and its distribution can provide significant benefits to the San Diego region. Foremost, using recycled water offsets potable water usage - reducing reliance on imported water and increasing local water supply through an alternative water source for non-potable water needs. In addition to adding a critical water supply, wastewater management is an important benefit. The more recycled water is used from the North City Water Reclamation Plant, the less wastewater needs to be treated at the Point Loma Treatment Plant and eventually discharged into the ocean.	None anticipated.
City of San Diego Reservoir Sediment Removal and Storage Recovery Project	(1) Increase water supply reliability, (2) Increase the ability to efficiently provide water at the lowest possible cost, (3) Provide local storage to mitigate emergencies and imported water shortages, (4) Enhance the ability to store and treat a large volume of water on an ongoing basis and lessen the impact of drought and/or supply interruption emergencies.	None anticipated.
City of San Diego Water Department Cornerstone Lands Management and Source Water Protection	(1) Maintain and improve the quality of source drinking water, (2) Establish and manage of critical buffers for source water quality protection; (3) Minimize introduction of pollutants into water supply reservoirs and their tributaries; (4) Reduce of the potential of pollutants into the water supply and other water bodies by targeting illegal dumping and other unauthorized activity which has negative consequences for water quality purposes; (5) Further understanding of biological resources; (6) Exotic species mapping, removal and control; (7) Reduce illegal activities which hinder water quality and habitat conservation efforts; (8) Clear demarcation of legal access points to lands for recreational purposes; (9) Increase	The general public may consider the limitation of public access to lands under the ownership of a governmental entity to be associated with negative consequences. This is a needed imperative in order to preclude impacts associated with the current ease of public access to these areas that are generally remote and difficult to monitor. Impacts associated with unauthorized access include damaging effects on highly sensitive habitats (such as vernal pools and coastal sage scrub) and water quality. It is reasonable to expect that some of the public which is currently accessing these areas, however unauthorized
City of San Diego Watershed-based Street Sweeping Program, Phase 1	(1) Improve water quality of the Pueblo HU by removing trash and debris from City streets and picking up finer material, such as dust, sediment, and metals, and (2) Increase public awareness through an outreach/education component.	None anticipated.
Conservation in the Campo Valley	Conservation of 1,600 acres of habitat and watershed lands identified as a priority by the Back Country Land Trust within the Campo (Tijuana River) Watershed; a collaborative, inclusive, and integrated approach to recharge the Campo groundwater; prevent pollution and implement recycling of toxic substances; improve existing water infrastructure to better serve the community; removal of invasive plant species to encourage native wetland plant species that will increase water recharge, improve filtration quality, and decrease erosion within the Campo watershed.	None anticipated.
County of San Diego Chollas Creek Runoff Reduction and Groundwater Recharge Project	Project will benefit Chollas Creek Watershed by reducing the runoff and other pollutants to Chollas Creek. Project will also serve as a demonstration LUD Project for municipal, builder/developer, industrial, and architectural/engineering planning audiences in all 11 hydrologic units and that its outreach program will target audiences from all of the hydrologic units. Project will help implementing pending TMDL for dissolved copper, lead, and zinc in Chollas Creek, Tributary to San Diego Bay and achieve the water quality standard in the Water Quality Control Plan for the San Diego Basin. Regionally, this project will implement several targeted project measures included in the San Diego Regional Water Quality Control	There will be temporary negative impacts to parking and access at the facilities included in the project. In addition, there could be minor adverse impacts to local air quality if dust associated with construction is not properly controlled. Any adverse impacts would be temporary and minor and cannot be quantified at this time.
Dulzura Creek Source Water Protection through Property Acquisition and Habitat Restoration	(1) Provide for ownership and management by the Water Department of a critical portion of Dulzura Creek which provides a natural conveyance system for water transfers; (2) Enhance regional efforts to conserve native habitats and associated species; (3) Acquisition and protection of parcels of habitats contiguous to other areas that have been acquired for conservation and limited recreation opportunities; (4) Minimize introduction of pollutants into water supply reservoirs and their tributaries; (5) Reduce potential of pollutants into the water supply and other water bodies; (6) Exotic species mapping, removal and control; (7) Reduce illegal activities which hinder water quality; (8) Increased participation by varied stakeholders (9) Imposition and enforcement of stricter controls to minimize adverse effects to water quality and conservation planning; (10) Further implement MSCP.	Some stakeholders may consider the acquisition of property for conservation purposes to yield some negative effects as any areas acquired would no longer be suitable for development. Any parcels acquired for this project would serve primarily conservation and water quality objectives. Limited recreational opportunities may be incorporated into these areas provided these are consistent with the overarching goals of the project.

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East Riparian Corridor project	<p>By treating the water with created wetlands and cascading riparian corridors, the Park will decrease BOD, TSS (total suspended solids), nitrates, metals and petroleum hydrocarbons. Aeration will be increased which improves water quality by maintaining good dissolved oxygen levels. Aeration also reduces algae growth by removing its food (nitrogen, ammonia and phosphates). In addition to improving the water quality, enhancing the riparian corridor will decrease erosion, improve soil conservation and enhance the overall guest experience. The project would also make more water available to pump through the wetlands, providing the exhibits and public areas with constant flow. The flow through the constructed wetlands above and below ground filtration would help control bacteria levels and enhance overall water quality through aeration and bio-filtration. These wetlands would also be an effective and convenient educational opportunity. Animal health will be positively affected by exposure to improved water.</p>	<p>The constructed wetlands rely on self-maintaining, self-regulating biological processes but will require some additional maintenance and monitoring. Additional personnel will be needed to perform horticultural maintenance and upkeep. However, the great advantage of a natural system is the minimal level of operator involvement, equipment maintenance, and energy requirements.</p>
Educational Demonstration Wetland Project	<p>(1) Improve water quality in the Park's East and South Africa ponds. (2) Provide natural water quality treatment. (3) Allow for the exchange of water between the East and South Africa ponds. (4) Serve as an educational experience to teach more than 1.5 individuals annually about water conservation and the importance of conserving wetlands. (5) Reduce imported water usage due to the extensive focus on water conservation, water recycling and water quality improvements. (6) create wetlands, and (7) control and treat pollutants and bacteria.</p>	<p>The constructed wetlands will require additional maintenance and monitoring by the Zoological Society of San Diego. Additional personnel and costs will be needed perform horticultural maintenance and upkeep.</p>
El Capitan Reservoir Hypolimnetic Oxygenation System for Water Quality Improvement	<p>(1) Increase water supply reliability in the San Diego Region. (2) Increase the ability to efficiently provide water at the lowest possible cost. (3) Provide local storage to mitigate emergencies and imported water shortages. (4) Enhance the ability to store and treat a large volume of water on an ongoing basis and lessen the impact of drought and/or supply interruption emergencies.</p>	<p>None anticipated.</p>
El Capitan Reservoir Watershed Acquisition Program	<p>(1) Reservoir source water protection. (2) Increase water supply reliability. (3) Protect and restore habitat. (4) Provide trails and recreation access. (5) Improve the economics of water supply.</p>	<p>None anticipated.</p>
El Monte Valley Groundwater Recharge and River Restoration Project - Phases 1 and 2	<p>(1) Produce drought-proof water supply for 10,000 households; (2) 5,000 AF reduction in Water Authority imported water demand; (3) Over 80% achievement of the San Diego County Water Authority's 2020 goal for local groundwater production; (4) legacy 500-acre River Restoration Project including habitat, trails and recreation of 135 acres of river bottom/riparian habitat, and 169 acres of upland and woodland habitat along the San Diego River, 40 acres of restored lake features, and 8 acres of protected archeological sites; (5) utilize an undertilled groundwater basin in El Monte Valley; (6) reuse wastewater which decreases the overall waste discharges to the Pacific Ocean; (7) replaces a planned Golf Course Project with a River Restoration Project; (8) provides ability to utilize additional groundwater storage of 6,000 to 8,000 acre-feet for water supply and emergency storage use; (9) provides opportunities for habitat restoration identified in the MSCP/NCSP; (10) creates a positive working partnership among several agencies in the region; and (11) local well owners will be converted from well</p>	<p>The projected negative impacts of the project are mostly temporary, and include temporary construction impacts such as dust, noise, traffic, and air pollution. These impacts will be mitigated during construction of the project and excavation of the sand resources. Permanent structures such as the Advanced Treatment Facility and Pump Station will be constructed on the existing Santee WRF site, which will alleviate negative impacts. Other negative impacts include increase in overall water rates and abandonment of existing private wells (replaced with potable water).</p>
Green – San Dieguito	<p>Resource preservation, pollution prevention, ecosystem restoration, public access/passive recreation, wildlife habitat, biological habitats, protection of rare, threatened, or endangered species/wildlife. Project will help buffer acres of sycamore-alder riparian woodland on adjacent and nearby lands.</p>	<p>No negative benefits have been identified. The County only buys land from willing sellers.</p>
Groundwater and Salt Management Program	<p>(1) Create additional local supply and reduce imported demands by 2,000 AFY. (2) Create energy savings of 5.2M kWh/year due to avoided energy costs of imported water. (3) Create a seawater intrusion barrier. (4) Maximize use of storage capacity of the groundwater basins to increase reliability and provide drought proof source of supplies. (5) Provide enhanced conjunctive use opportunities. (6) Reduce salt loading to the basin. (7) Allow for the purchase of imported water during off-peak periods. (8) Increase data collection.</p>	<p>Potential temporary project impacts including noise, traffic and dust could occur from construction of distribution system</p>
Hodges Reservoir Water Quality Improvements Implementation Projects	<p>This project will address the water quality issues of Hodges Reservoir through solutions that offer multiple benefits. These are reflected in the following benefits: (1) Improving drinking water quality; (2) Increase water supply reliability; (3) Reduce imported water dependence; (4) Improve scientific and technical basis for Hodges Reservoir decision making; (5) Improving recreational benefits; and (6) Restore habitat.</p>	<p>None anticipated.</p>

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Hodges Reservoir Water Quality Improvements Plan	Preparation of this plan would investigate the development and implementation of water management strategies which would allow for complete utilization of Hodges Reservoir as a significant local water supply alternative. Understanding the impact of connecting Hodges Reservoir to the Emergency Storage Project network is vital to managing the scarce local resources available to the region.	None anticipated.
Implementation of Agricultural Efficiency Programs	(1) Increased agricultural audit efforts to reduce water by 1,500 to 3,000 AFY. (2) Allow the Water Authority to obtain first hand accounts of water efficiency difficulties faced by the agricultural industry. (3) Provide agricultural water efficiency research to expedite testing, evaluation, and implementation of products designed to save water, while preserving crop output. (4) Obtaining a reliable estimate of crops in San Diego County, their breakdown, and respective water use will enable Water Authority staff to increase additional efficiency efforts and plan for future water resources. (5) Reduce energy consumption.	None anticipated. It is suspected that water consumption attributable to agriculture is underestimated. Obtaining a good measure of existing agriculture and its distribution by crop and water needs, will assist staff in planning for future water resources and efficiency efforts.
Implementation of Integrated Landscape Program	(1) Reduce water use by approximately 13,500 AFY. (2) Increase public education and knowledge of conservation. (3) Allow the Water Authority to monitor responsiveness to conservation education, and (4) Reduce energy costs.	There are no significant negative impacts.
Implementing Improvements to the Rose Creek Watershed: Controlling Invasive Exotic Species	(1) Improve water quality. (2) Improve biological diversity. (3) Enhanced public safety. (4) Reduce fire risk and (5) Strengthened community connections.	Potential displacement of homeless that will be mitigated by outreach.
Implementing Improvements to the Rose Creek Watershed: Enhancing the Connection of Rose Creek to Mission Bay	(1) Improve water quality in Mission Bay and lower Rose Creek; (2) Improve biological diversity and (3) Enhance public access to the creek and bay.	Campland, the area that would become wetlands as proposed in the 1994 Mission Bay Plan, now provides a recreational opportunity (RV camping) that would be lost if the wetlands were built in its place. This RV recreational opportunity is seen by some as a lower cost lodging alternative to Mission Bay hotels. Alternative camping or low impact hostelling could be incorporated into the design of the eventual wetlands project which could ameliorate this concern. Other Mission Bay lessees may be affected by this proposal but their concerns could be addressed through the planning process.
Integrated Commercial/Industrial/Institutional and Residential Indoor Conservation Programs.	This project will allow business and residential customers to install water saving devices that will reduce the amount of water used in the San Diego region.	None anticipated.
Joint Water Agency Natural Community Conservation Plan/ Habitat Conservation Plan (JWA NCCP/HCP): Initial Implementation	Conserve 5,400 acres of open space and habitat lands to (1) conserve habitat, (2) preserve aesthetics, (3) enhance recreation, (4) support preservation of ecological communities and endangered species, (5) provide regulatory certainty to participating water agencies in the siting, development, maintenance and operation of water and/or wastewater facilities; and (6) reduce constraints on public facility development that result from the uncoordinated application of federal and state resource protection laws.	None anticipated.
La Jolla Shores Ocean Protection Project	(1) Protect water quality along the La Jolla Shores coastline. (2) Protect public health. (3) Reducing water use. (4) Maintain recreational opportunities. (5) Preserving valuable marine habitats. (6) Protecting rare, threatened or endangered species, and (7) increase public awareness and education.	Excessive groundwater infiltration has the potential to damage street, sidewalk and building improvements. To address this potential concern, the City's draft Strategic Plan for Watershed Activity Implementation includes interim guidelines for site selection and sizing of infiltration planters and pervious concrete or porous asphalt paving. These guidelines will be used to help avoid potential negative impacts, such as undermining the foundations of nearby structures with too much groundwater. There is some concern that the pollutants infiltrated by the porous paving may adversely affect groundwater resources. To address this potential concern, the City's interim infiltration guidelines also identify conservative infiltration restrictions to protect any potential groundwater resources.
Las Californias Binational Conservation Initiative: A Vision for Habitat Conservation and Watershed Protection	(1) Conserve 3,361 acres of land located in the Cottonwood and Campo Creek sub-area basins, (2) Protect water supplies, water quality, and hydrological processes. (3) Reduce erosion and sedimentation. (4) Enhance endangered species. (5) Enhance recreational opportunities, and (6) Enhance aesthetics.	None anticipated.
Los Peñasquitos Habitat Diversification Project	(1) Protect beneficial uses. (2) Protect and enhance 387 acres of endangered coastal salt marsh habitat. (3) Reduce storm runoff. (4) Reduce sedimentation. (5) Improve tidal circulation. (6) Improve flood protection, and (7) Restore historic mud flats.	Disturbance of lagoon habitat during excavation of lagoon channels and implementation of additional culverts under the railway berm.

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Los Peñasquitos Lagoon Enhancement Plan and Program Update and Implementation.	(1) Protect beneficial uses. (2) Protect and enhance 397 acres of endangered coastal salt marsh habitat. (3) Facilitate watershed management by updating and implementing an essential management tool. (4) Aid in establishing watershed management priorities and initiating environmental documentation/permits. (5) Facilitate the acquisition of funding for wetland restoration and enhancement projects. (6) Facilitate the success of management projects such as storm water management, removal of non-native plant species, controlling non-point source pollution both locally and throughout the region.	None anticipated.
Los Peñasquitos Pollutant Monitoring Project	(1) Protect beneficial uses afforded. (2) Protect and enhance 397 acres of endangered coastal salt marsh habitat. (3) Reduce pollutant loads. (4) Reduce freshwater flows. (5) Reduce stormwater runoff. (6) Increase monitoring and data collection.	None anticipated.
Los Peñasquitos Watershed Sediment Transport Analysis and Monitoring Project.	(1) Protect 397 acres of endangered coastal salt marsh habitat listed on the 303(d) impaired waterbodies list. (2) Reduce sediment loads. (3) Protect beneficial uses. (4) Reduce turbidity. (5) Reducing levels of pollutants that are transported into the lagoon via sediment. (6) Provide quantifiable means of accurately measuring sediment input from a watershed in the San Diego region and to facilitate the establishment of realistic TMDL's for Los Peñasquitos Canyon. (7) Helping the City of San Diego, County, City of Poway, and Caltrans comply with TMDLs.	None anticipated.
Mission Valley Brackish Groundwater Desalination Pilot Project	The project has benefits such as improving salt contents of the groundwater basin, developing new municipal water supply and reliable local water supply, reducing demand for imported water and reducing regional electrical power consumption.	The project is potentially impacts to surface water flow or aquatic habitat that may result from groundwater pumping. The impacts will be confirmed by completing the environmental and geotechnical analyses prior to project implementation.
Mountain Empire Watershed Preservation Program – "Pollution Prevention Education"	(1) Preserve and protecting current groundwater resources, (2) implement a public education program.	None anticipated.
North City Recycled Water Distribution System Expansion - Phase II	Recycled water and its distribution can provide significant benefits to the San Diego region. Foremost, using recycled water offsets potable water usage - reducing reliance on imported water and increasing local water supply through an alternative water source for non-potable water needs. In addition to adding a critical water supply, wastewater management is an important benefit. The more recycled water is used from the North City Water Reclamation Plant, the less wastewater needs to be treated at the Point Loma Treatment Plant and eventually discharged into the ocean.	None anticipated.
Northern San Diego County Invasive Non-Native Species Control Program	(1) Improve ability to meet water quality standards. (2) Reduce erosion and sedimentation. (3) Lower NPS pollution (coli form, nutrients/ach, organic inputs) increased groundwater recharge, and increased water availability will help mitigate and improve water qualities and beneficial uses related to recreation. (4) Reduce invasive species. (5) Improve water availability. (6) Reduce flooding. (7) Enhance habitat and endangered species.	None anticipated.
Over-irrigation Runoff/Bacteria Reduction Project	Conserve water resources and improve water quality. Eliminating and preventing polluted runoff from entering receiving waters is more cost effective than cleaning and restoring polluted water later. The implementation of Irrigation efficiency BMPs is an important step in conserving and protecting water quality in the San Diego region.	The only possible impact from this project may be a reduction of water sources to non-natural drainages that may support habitat. These areas often support non-native habitat so that reducing surface water flows may just as likely be a benefit rather than a negative impact. This impact can be mitigated by selecting final sites that drain into storm drain systems and not into habitat areas. Therefore this is not considered to be a significant negative impact.
Preserve Wright's Field	Conserve 170 acres of habitat and watershed lands identified as a priority by the Back Country Land Trust within the San Diego River and Sweetwater Watersheds; removal of invasive plant species to encourage native wetland plant species that will increase water recharge, improve filtration quality, and decrease erosion within the San Diego River and Sweetwater River watersheds.	None anticipated.
Preserving the Peutz Valley Watershed	Conservation of an additional 200 acres of habitat and watershed lands identified as a priority by the Back Country Land Trust within the Peutz Valley Watershed; a collaborative and inclusive approach to conservation on available lands in the valley; removal of invasive plant species to encourage native wetland plant species that will increase water recharge, improve filtration quality, and decrease erosion within the Peutz Valley watershed.	None anticipated.
Ramona Grasslands	(1) Protecting wildlife and preventing habitat fragmentation; (2) Maintaining watershed integrity; and (3) Adding at least 2,000 acres to the lands already conserved.	None anticipated.

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Recycled Water and Groundwater Storage Facility Project	To be able to store and reuse excess recycled wastewater and off peak well water, the Park will be able to provide a supplemental (and higher quality) source of irrigation; thus, reducing the dependency on groundwater and potable sources. Also being able to provide water for irrigation when the pumping systems need to be repaired. The project allows for blending of different sources of water for better water quality management. The electrical use from well pumps can also be timed for off peak loading.	Some disruption of views due to construction will occur and some on grounds traffic disruption is possible. Careful monitoring of BMP's during construction will be necessary.
Recycled Water Retrofit Assistance Program	(1) Increase recycled water use and help meet Water Authority recycled water use targets, (2) Increase in nutrients and organic matter for agricultural soil conditioning, resulting in reduced fertilizer use; (3) Provide a secure water supply during drought periods; (4) Provide energy savings; the use of recycled water as a local water supply source offsets the need to develop more energy-intensive water supplies, (5) Reduce waste discharge impacts by treating and beneficially reusing wastewater.	There are no significant negative Project impacts.
Recycled Water System Improvements	(1) Create 320 AFY of new, local recycled water supply, (2) Increase local supply reliability and reduce dependence on imported water, (3) Save energy costs from imported and reduce corresponding greenhouse gas emissions, (4) Develop expanded distribution infrastructure that can be used to deliver non-potable supplies in addition to recycled water to the Solana Beach area, (5) Reduce the amount of wastewater disposal capacity needed.	Potential temporary project impacts including noise, traffic and dust could occur from construction of distribution system
Rutherford Ranch West acquisition of 1,689 acres on Volcan Mountain	Enhance beneficial uses, conserve land, preserve habitat and species, increase recreation potential	None anticipated.
Sage Hills Open Space Acquisition	If acquired the Sage Hills property will result in numerous benefits, including: preservation of key riparian and coastal sage scrub habitat and watershed, pollution prevention, ecosystem restoration, public access/passive recreation, wildlife habitat, biological habitats, protection of rare, threatened, or endangered plants and wildlife. The Sage Hills project will also help provide a key public open space buffer to large-scale commercial and residential developments nearby.	None anticipated.
San Diego County Rural Community Watershed Councils (primarily targeting inland areas not served by CWA/MWD infrastructure)	(1) Create locally led, voluntary Community Watershed Councils to increase knowledge and awareness of water quality/quantity BMPs, (2) Increase voluntary compliance for proper water usage to increase water supplies and reduce pollution, (3) Improve water retention and reduce point- and non-point source pollution county-wide, (4) Gather and create a repository for data collected regarding unincorporated area private and public well systems, including well depth, pump rate (gallons per minute), location and age of wells, known ground water supplies, climatic changes and potential impact on groundwater supplies. (5) Create widespread stakeholder partnerships working toward common goals.	None anticipated.
San Diego National Wildlife Refuge - Otay Unit Land & Cresstridge Linkage Acquisition	Land conservation, habitat protection, species protection	None anticipated.
San Diego Region Four Reservoir Interim Project Feasibility Study	(1) More efficient use of the reservoirs by creating an enhanced and integrated reservoir system o Increase water supply reliability in the San Diego Region; (2) Increase the ability to efficiently provide water at the lowest possible cost o Increase water storage capacity significantly without creating new reservoirs or new storage capacity; (3) More effectively use imported water aqueducts o Provide local storage to mitigate emergencies and imported water shortages, (4) Enhance the ability to store and treat a large volume of water on an ongoing basis, (5) Allow more water to be imported when it is more plentiful.	The environmental impacts of the Interim Project should be low since each reservoir to be linked to the imported water system has been in place since the 1940s or before, and their footprints will not increase. In 1993, the Corps Study found that the impact of pipeline construction could be minimized by following existing streets and roads, utility easements, and by tunneling in some areas. The Interim Project would not increase the importation of water and consequently impact water supply sources because it has no effect on demand. Linking existing reservoirs into the imported water system does significantly aid the
San Diego Regional Water Quality Assessment and Outreach Project	(1) Data collection and management, (2) public education and stakeholder outreach, (3) support TMDLs, (4) Identify polluted waters, (5) Track and identify effectiveness of BMPs	None anticipated.

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San Diego River Watershed Coordinator	This project has the benefit of advancing targeted goals and actions identified in the Watershed Management Plan for the San Diego River. By working together, projects can be advanced, improved, refined, and truly integrated for the greatest benefit. This coordination will also enable leveraging of funding to other available sources. The data management activity will advance the existing San Diego River data clearinghouse functions which the River Park Foundation fulfills, and is identified within the Watershed Management Plan. A key component will be the opportunity to provide education materials to the public and to provide a virtual forum for engaging them in project development and planning.	None anticipated.
San Dieguito Watershed Council Staffing	(1) Provide a forum for public dialogue about watershed issues, (2) encourage stewardship of the watershed's natural resources and, most importantly, (3) facilitate implementation of the San Dieguito Watershed Management Plan through collaborative action, the mobilization of funding and other resources to address specific Plan actions and providing a platform for coordinated action by stakeholders, citizens and public agencies, (4) Continually evaluate the Plan and progress toward achieving its goals.	This request for funding to support a paid staff position for the San Dieguito Watershed Council is not anticipated to have any negative project impacts. However, the position will assist in managing certain projects for the Council (for example, invasives removal and habitat restoration) that may have temporary project-specific negative impacts such as noise or increased potential for erosion as native plants become established.
San Pasqual Basin Brackish Groundwater Desalination Full-scale Project - Planning and Design	The project has benefits such as improving salt contents of the groundwater basin, developing new municipal water supply and reliable local water supply, and reducing dependence on imported water.	None anticipated.
San Pasqual Basin Conjunctive Use (Storage and Recovery) Full-scale Project - Planning and Design	Sustain a safe, reliable local groundwater supply and reduce dependence on imported water. Benefits in addition to the conjunctive use of the basin are groundwater management, local involvement with stakeholders, data collection and management, and water quality management.	None anticipated.
San Vicente Reservoir Hypolimnetic Oxygenation System for Water Quality Improvement	(1) Increase water supply reliability in the San Diego Region, (2) Increase the ability to efficiently provide water at the lowest possible cost o Provide local storage to mitigate emergencies and imported water shortages, and (3) Enhance the ability to store and treat a large volume of water on an ongoing basis and lessen the impact of drought and/or supply interruption emergencies.	None anticipated.
San Vicente Reservoir Source Water Protection through Watershed Property Acquisition	The proposed project would act as part of a mosaic within this portion of the watershed that will allow for the conservation of important regional wildlife habitat providing for linkages and wildlife movement corridors in perpetuity, (3) Maintenance and improvement of the quality of source drinking water. Improved water quality should lead to reducing costs of treatment to achieve potable water; (4) Establishment and management of critical buffers for source water quality protection that serves as part of the regional Emergency Storage Project; (5) Minimization of the introduction of pollutants into water supply reservoirs and their tributaries; (6) Reduction of the potential of pollutants into the water supply and other water bodies by targeting illegal dumping and other unauthorized activity which has negative co	Some stakeholders may consider the acquisition of property for conservation purposes to yield some negative effects as any areas acquired would no longer be available for development. It is important to note that the Water Department would only acquire land from willing sellers.
Santa Margarita Conjunctive Use Project	(1) Enhance stakeholder outreach, data collection and assessment to verify impairment of streams and the lagoon, (2) evaluate designated beneficial uses, use attainability, site specific objectives, nutrient numeric endpoint evaluation, a model calibration study to support TMDL implementation, and studies to improve TMDL development. Ultimate project benefits will be the identification of TMDLs, related water quality improvement best management practices (BMPs), and attainment of increased beneficial use of this water supply.	The project is a research study that involves the collection and analysis of data. There is no negative impact.
Santee Water Reclamation Facility Expansion Project.	This project and the linked El Monte Valley Recharge Project 1) Produce drought-proof water supply for 10,000 households; (2) 5,000 AF reduction in Water Authority imported water demand; (3) Over 80% achievement of the San Diego County Water Authority's 2020 goal for local groundwater production; (4) legacy 500-acre River Restoration Project including habitat, trails and recreation of 135 acres of river bottom/riparian habitat, and 169 acres of upland and woodland habitat along the San Diego River, 40 acres of restored lake features, and 8 acres of protected archeological sites; (5) utilize an underutilized groundwater basin in El Monte Valley; (6) reuse wastewater, which decreases the overall waste	The projected negative impacts of the project are mostly temporary and include temporary construction impacts such as dust, noise, traffic, and air pollution. These impacts will be mitigated during construction of the project. Permanent structures will be constructed on the existing Santee WRF site, which will alleviate negative impacts.

Tier I projects listed alphabetically
by project title.

Appendix 11
IRWM Tier I Projects
Benefits and Impacts

Project Title	Summary of Project Benefits	Summary of Project Impacts
South San Diego County Water Supply Strategy	<p>(1) Maximize the efficient use of local brackish water from the SDP in a sustainable manner; (2) Reduce dependence on imported water; (3) Mitigate potential impacts of planned or emergency supply interruptions; (4) Minimize supply and environmental impacts to imported water sources from the Colorado River and Bay-Delta; (5) Develop the Strategy through an integrated suite of water supply, treatment, and brine conveyance disposal projects employing the highest technology available; (6) Develop the Strategy through an open, collaborative process that involves the parties necessary for a consensus.</p>	<p>Phase III of the USGS study of the San Diego Formation will determine potential impacts and necessary mitigation. Feasibility studies for the Regional Concentrate Conveyance Facility and the Otay River Basin Groundwater Desalination Facility will determine potential negative impacts that may result from implementation of those important elements of the Strategy.</p>
Sweetwater River Watershed Management Plan	<p>(1) Identify existing conditions in the watershed, issues and concerns of stakeholders, goals, objectives and a vision for the Sweetwater Watershed, (2) Identify actions and projects to be implemented to better protect, enhance and preserve the functions of the Sweetwater River Watershed, (3) will identify park, natural resources, water supply and water quality projects to improve and maintain the environment and the quality of life of residents in the watershed and the San Diego Region.</p>	<p>None anticipated.</p>
Tertiary Wastewater Treatment Upgrade	<p>Water savings are significant: 70,000 gallons/day. By upgrading the wastewater plant, the Park will be able to provide a supplemental (and higher quality) source of irrigation; thus, reducing the dependency on groundwater and potable sources. Also by producing higher quality water (fewer organics, nitrates, bacteria), animal health and visitor experience are both positively affected.</p>	<p>Work will have to be done to ensure continued function of the existing facility while the work is progressing.</p>
Tijuana River Valley Invasive Plant Control Program - Phase 4	<p>(1) Timely and effective control of the target species in 1,100 acres of the prime estuarine and riparian habitats in the Tijuana River Valley; (2) Revegetation of selected control areas with native plant species; (3) Improvement and protection of the beneficial uses of the valley, especially RECC2, WARM, WILD RARE, and BIOL; (4) Accumulation of monitoring data pertaining to treatment effectiveness and habitat improvement that can be used to evaluate this project and help guide future restoration efforts in this and other watersheds; and (5) Improved working relationships among all stakeholder groups in the valley through their participation in the Technical Advisory Group.</p>	<p>None anticipated.</p>
Valley Well Improvement Project	<p>Increase water supply reliability</p>	<p>A short downtime of one of these wells for these improvements to take place would be the only negative impact. The other well will be brought back on line so there is no negative impact while this work is being done.</p>
Water Brooms for Schools and Fast Food Restaurants	<p>(1) Reduce water usage for outdoor clean up tasks in schools and fast food restaurants, (2) Reduce runoff, (3) reduces the amount of contaminants reaching streams and rivers through local watersheds, therefore reducing non-point source pollution, and point source pollution (4) improve water quality in the San Diego River, Sweetwater, and Otay watersheds which would assist in protecting these watersheds and water quality, (5) allow institutions to meet health standards while saving water.</p>	<p>None anticipated.</p>
West Riparian Corridor project	<p>(1) Decrease BOD, TSS, nitrates, metals and petroleum hydrocarbons, (2) increase dissolved oxygen, (3) enhance the riparian corridor, (4) decrease erosion, improve soil conservation and enhance the overall guest experience, (4) increase hydraulic flows, and (6) create wetlands.</p>	<p>The constructed wetlands rely on self-maintaining, self-regulating biological processes but will require some additional maintenance and monitoring. Additional personnel will be needed to perform horticultural maintenance and upkeep. However, the great advantage of a natural system is the minimal level of operator involvement, equipment maintenance, and energy requirements.</p>
Wetland Expansion Science & Technology Against Runoff (WESTAR II)	<p>(1) Improve water quality, (2) Enhance fish and wildlife populations; (3) Perform channel flood maintenance, (4) conduct outdoor science education; and (5) implement techniques for the control of adverse impacts in urban waterways, such as polluted runoff, invasive non-native species and homeless camps.</p>	<p>None anticipated.</p>

Tier I projects listed alphabetically
by project title.