

Appendix XX. Water Quality Improvement Plan Strategies and Schedules

This Page Left Intentionally Blank.

Table 1. City of San Diego Jurisdictional Strategies

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
Jurisdictional Strategies						
Development Planning						
All Development Projects						
CSD-1	Establish guidelines and standards for all development projects; provide technical support related to implementation of source control BMPs to minimize pollutant generation at each project and implement LID BMPs to maintain or restore hydrology of the area or implement easements to protect water quality, where applicable and feasible. Includes internal coordination and collaboration between City departments (DSD, PWD, and Engineering) to improve success and long-term benefits of BMPs.	Refer to JRMP (currently under development).	City-wide	Prior to FY16	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-2	Investigation and research of emerging technology.	Annually the Construction & Development Standards Group identifies new tasks to conduct literature review, communication with researchers outside of the City, physical testing and experimentation of new or emerging technologies, and other research with the goal of updating tools available for reducing pollutant loads from development and redevelopment sites.	City-wide	Prior to FY16	As needed	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-3	Approve and implement a green infrastructure policy.	The City will begin developing a policy in FY16 that will increase the green infrastructure requirements for City CIP projects. This policy will be coordinated with ongoing efforts to update City design manuals and LID design standards for public LID BMPs.	City-wide on public parcels	FY16 (Begin)	As needed	T&SW with DSD and PWD
CSD-4	Develop Design Standards for Public LID BMPs.	Improve quality of design to ensure efficiency and reliability in public designs.	City-wide	FY14-FY15	As needed	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-5	Outreach to impacted industry regarding minimum BMP requirement updates.	Affects commercial, industrial, and residential development.	City-wide	FY15	As needed	TBD
CSD-6	Train staff on LID regulatory changes and LID practices.	Formal training is required for all staff involved in development plan review to increase knowledge of LID BMPs. Goal of training associated with LID practices and regulations is to promote LID implementation and to avoid adverse conditions such as trees planted within swales, or planned drainage patterns which obstruct or inhibit LID performance.	City-wide	FY16	As needed	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-7	Amend municipal code and ordinances, including zoning ordinances, to facilitate and encourage LID opportunities to support compliance with the MS4 Permit and TMDLs in a reasonable manner. Ensure consistency with the City of San Diego's BMP Design Manual. Update the Storm Water Standards Manual accordingly.	Municipal codes and ordinances will be brought to City Council for consideration to encourage LID implementation (e.g., runoff detention and filtration using natural filters and stormwater retention for reuse). LID stormwater management will be encouraged in proposed codes and ordinances associated with development and redevelopment projects, which are brought to City Council for consideration.	City-wide	FY15	As needed	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-8	Create a manual that outlines right-of-way design standards.	Create a manual that includes flood control performance standards, permanent BMP elements design standards, design standards for green streets and other BMPs, and maintenance access. Provides drainage and streets design standards. Opportunity to merge various existing manuals and provide consistency.	City-wide	FY15	One time	T&SW with DSD and PWD
CSD-9	Provide technical education and outreach to the development community on the design and implementation requirements of the MS4 Permit and Water Quality Improvement Plan requirements.	Technical education and outreach to the development community includes outreach on design standards, City design manuals, and the WMAA.	City-wide	Prior to FY16	Ongoing	T&SW with DSD
Priority Development Projects (PDPs)						
CSD-10	For PDPs, provide technical support to other City departments to ensure implementation of on-site structural BMPs to control pollutants and manage hydromodification by developing City wide storm water development standards and design guidelines.	Coordinate with other City departments to promote and confirm a thorough understanding of requirements for implementing structural BMPs that control pollutants and manage hydromodification. Included in that understanding are requirements to confirm proper design and construction through processes controlled by other City departments.	City-wide	FY16	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-11	Institute a program to verify and enforce maintenance and performance of treatment control BMPs.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-12	Update BMP Design Manual procedures to determine nature and extent of storm water requirements applicable to development projects and to identify conditions of concern for selecting, designing, and maintaining appropriate structural BMPs.	Refer to JRMP (currently under development).	City-wide	FY15	Every 5 years/ permit cycle	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-13	Amend BMP Design Manual for trash areas. Require full four-sided enclosure, siting away from storm drains and cover. Consider the retrofit requirement.	Amend BMP Design Manual and zoning standards/requirements which address reduction of pollutants for common areas of trash build-up (e.g. restaurants, supermarkets, "big box" retail stores with food, pet stores). Most effective method for source control of bacteria and trash is to employ four-sided trash enclosures with a cover over trash areas.	City-wide	FY15	One time	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-14	Amend BMP Design Manual for animal-related facilities, such as such as animal shelters, "doggie day care" facilities, veterinary clinics, breeding, boarding and training facilities, groomers, and pet care stores.	Amend BMP Design Manual and zoning requirements (including retrofits) to provide supplemental standards for animal facilities (including animal shelters, dog daycares, veterinary clinics, groomers, pet car stores, and breeding, boarding, and training facilities). Supplemental standards may include requiring covered trash enclosures, identification of landscaped relief areas on site plans, ensuring drainage connections and treatment swales for areas that will not drain to the sanitary sewer, as well as inspection of grading, drainage, and landscaping for outdoor exercise areas.	City-wide	FY15	One time	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-15	Amend BMP Design Manual for nurseries and garden centers.	Amend BMP Design Manual to provide supplemental standards for plant nurseries and garden centers. Standards will focus on reducing irrigation runoff, and loading of sediment, pesticides, and nutrients. Measures may include: covered outdoor storage, green waste management BMPs, improved irrigation efficiency to reduce dry-weather runoff, and containment of runoff from impervious areas where plants and materials are stored.	City-wide	FY15	One time	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-16	Amend BMP Design Manual for auto-related uses.	Amend BMP Design Manual to provide supplemental standards for automotive-related uses to reduce loading of metals, oils, grease, and trash. Measures may include: four-sided covered trash enclosures, and careful review of auto-related usage areas (e.g. garage bays at repair shops) for grading, drainage, and drain connections to sanitary sewer systems.	City-wide	FY15	One time	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-17	Develop and administer an alternative compliance program for on-site structural BMP implementation (includes identifying Watershed Management Area Analysis [WMAA] candidate projects). Refer to Section 4.2.5.	Refer to JRMP (currently under development).	City-wide	FY15	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-18	Create a fund that allows habitat acquisition, protection enhancement, and restoration in conjunction with other cooperating entities including community groups, academic institutions, state county, and federal agencies, etc.	This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) consensus and community support has been achieved.	City-wide	Optional	TBD	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
Construction Management						
CSD-19	Coordinate with other City departments to promote and confirm a thorough understanding of requirements for implementing temporary BMPs that control sediment and other pollutants during the construction phase of projects. Included in that understanding are requirements to inspect at appropriate frequencies and effectively enforce requirements through process controlled by other City departments.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
Existing Development						
Commercial, Industrial, Municipal, and Residential Facilities and Areas						
CSD-20	Administer a program to require implementation of minimum BMPs for existing development (commercial, industrial, municipal, and residential) that are specific to the facility, area types, and PGAs, as appropriate. Includes inspection of existing development at appropriate frequencies and using appropriate methods.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW with DSD, PUD, & PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-21	Update minimum BMPs for existing residential, commercial, and industrial development. Specific updates to BMPs include required street sweeping, catch basin cleaning, and maintenance of private roads and parking lots in targeted areas.	Refer to JRMP (currently under development).	City-wide	FY15	Every 5 years	T&SW
CSD-22	Outreach to property managers and trash haulers to elevate the emphasis of power washing as a pollutant source.	Emphasis will be placed on non-compliant washing as an enforceable violation.	City-wide Residential, commercial and industrial areas	FY15	Ongoing	T&SW
CSD-23	Implement property based inspections.	Property-based inspections increase awareness and responsibility for individual properties to tackle issues associated with trash, landscapes, and parking areas. Expanding beyond the business-level inspections will achieve different and more effective opportunities for education, outreach, inspection, and enforcement to encourage water conservation strategies.	City-wide	Prior to FY16	Ongoing	T&SW
CSD-24	Review policies and procedures to ensure discharges from swimming pools meet permit requirements.	Verify and bring to City Council for consideration an update (as needed) for the City's Municipal Code (43.0301) to meet new permit requirements for swimming pool discharges.	City-wide	FY15	As needed	T&SW, City Attorney (Civil & Criminal)
CSD-25	Promote and encourage implementation of designated BMPs for residential and non-residential areas.	Landscape-based rebates are a "gateway" for adoption of other beneficial practices and are one of the nonstructural methods which address impacts from single-family residential areas (City of San Diego 2011 program development background study). Residential incentives can include: education and training (neighborhood watershed field days), and aggressive subsidies or rebates for grass replacement and rainwater harvesting. Existing programs will be expanded overall, and also have targeted expansion within specific subwatershed, particularly with highest water quality priority conditions.	City-wide Residential and Commercial Areas	Prior to FY16	Ongoing	T&SW with DSD, PUD, PWD, MWD, CWA & local water agencies
CSD-26	Residential and Commercial BMP: Rain Barrel	The existing PUD rebate program will continue for residential properties and expand for commercial properties for water collection, conservation, and reuse with rain barrels.	City-wide Residential Areas	Prior to FY16	Ongoing	T&SW with DSD, PUD, PWD, & local water agencies
CSD-27	Residential and Commercial BMP: Grass Replacement	The existing PUD grass replacement cash rebate program will continue and expand for residential and commercial properties. Program encourages a reduction in water use through the conversion of non-artificial grass to water wise plant material, while maintaining a high level of living landscape to benefit the environment.	City-wide Residential and Commercial Areas	Prior to FY16	Ongoing	T&SW with DSD, PUD, PWD, & local water agencies
CSD-28	Residential and Commercial BMP: Downspout Disconnect	Disconnecting downspouts provide alternate runoff pathways from rooftops, sidewalks, driveways, and roads. Disconnecting downspouts from residential areas to pervious land can allow for depression storage and infiltration.	City-wide Residential and Commercial Areas	FY16	Ongoing	T&SW with DSD, PUD, PWD, & local water agencies
CSD-29	Residential and Commercial BMP: Microirrigation	The existing PUD micro-irrigation rebate program will continue and increase for residential and commercial properties. Application of microirrigation aims to improve the efficiency of landscape irrigation through the precise application of water.	City-wide Residential Areas	Prior to FY16	Ongoing	T&SW with DSD, PUD, PWD, & local water agencies
CSD-30	Provide Onsite Water Conservation Surveys.	Provide free onsite water conservation surveys to commercial and residential customers to reduce overirrigation and to encourage water conservation.	City-wide Residential and Commercial Areas	Prior to FY16	Ongoing	T&SW with DSD, PUD, PWD, & local water agencies

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
MS4 Infrastructure						
CSD-31	Implementation of operation and maintenance activities (inspection and cleaning) for MS4 and related structures (catch basins, storm drain inlets, channels as allowed by resource agencies, detention basins, etc.) for water quality improvement and for flood control risk management.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW
CSD-32	Enhanced catch basin cleaning to increase pollutant removal (up to 4 times per year) in the rainy season.	To increase pollutant load removal, catch basins will be cleaned up to four times per year in the rainy season. The City of San Diego's pilot study found that major pollutants may vary from neighborhood to neighborhood (yard waste versus trash and sediment). Implementation may be adapted based on catch basin record keeping and cleaning optimization. Increase in frequency will be phased over 4 Fiscal Years.	Los Peñasquitos and Chollas WMAs: High priority areas identified in pilot study	FY16	Ongoing	T&SW
CSD-33	Enhanced catch basin cleaning to increase pollutant removal (between 2-4 times per year in medium priority areas in the rainy season).	To increase pollutant load removal, catch basins will be cleaned between 2-4 times per year in medium priority areas in the rainy season. The City of San Diego's pilot study found that major pollutants may vary from neighborhood to neighborhood (yard waste versus trash and sediment). Implementation may be adapted based on catch basin record keeping and cleaning optimization. Increase in frequency will be phased over 4 Fiscal Years.	Tijuana River WMA: Medium priority areas identified in pilot study	FY16	Ongoing	T&SW
CSD-34	Increased frequency of catch basin inspection and as-needed cleaning.	For every segment of channel that is cleared, the City will conduct an inspection and as-needed cleaning of every catch basin within 100 feet of the cleared segment of channel. Additional inspection and as-needed cleaning will occur every three months for one year after the segment of channel is cleared.	Los Peñasquitos WMA (31 open channel segments), Chollas Watershed (48 open channel segments), Tijuana River WMA (15 open channel segments)	FY13	5 years (ends FY18)	T&SW
CSD-35	Proactively repair and replace MS4 components to provide source control from MS4 infrastructure.	In order to limit inflow of pollutants and reduce pollutant loads, proactive measures will be taken to improve, repair, and replace MS4 components. The City of San Diego will start a multi-year program of repairing and replacing storm drain pipes to reduce sediment loading to the MS4. Development of an assessment management program and bond issues will be addressed. Exploration of daylighting pipes will take place where feasible and appropriate.	City-wide	FY16	Ongoing	T&SW
CSD-36	Coordinate with other City departments (PUD) to implement controls to prevent infiltration of sewage into the MS4 from leaking sanitary sewers.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW with PUD
CSD-37	Identify sewer leaks and areas for sewer pipe replacement prioritization.	Risk assessment to include identifying targeted areas (age, location, proximity to MS4), coming up with methodology, pilot, desktop exercise/analysis.	City-wide	FY16	As needed	T&SW with PUD
Roads, Street, and Parking Lots						
CSD-38	Implement operation and maintenance activities for public streets, unpaved roads, paved roads, and paved highways.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-39	Outreach to street sweeping enhancement-targeted areas.	Division staff will conduct a thorough education and outreach effort beginning months in advance of the expansion of sweeping routes. Staff will work with the affected Council offices, community stakeholders, non-governmental organizations and community groups to build community awareness and acceptance of the enhanced sweeping program.	Los Peñasquitos WMA and Chollas Watershed	FY16	Ongoing	T&SW
CSD-40	Enhance street sweeping through equipment replacement (replace mechanical sweepers with regenerative air sweepers) and route optimization (sweep all routes twice per month) in targeted areas.	Following outreach and posting, street sweeping efforts will be increased in target areas (those with sediment or metals as a highest priority water quality conditions). Replacement of street sweeping equipment with high-efficiency regenerative air and vacuum-assisted sweepers over time is expected to further increase load reductions (even if current routes and frequencies remain unchanged).	Los Peñasquitos WMA and Chollas Watershed	FY17	Ongoing	T&SW
CSD-41	Initiate sweeping of medians on high-volume arterial roadways.	Medians of roadways are also a potential source of pollutants. Consider implementing or increasing sweeping of medians. Consider mechanical and hand sweeping techniques.	City-wide	FY17	Ongoing	T&SW
CSD-42	Implement additional street sweeping (Settlement Agreement).	City shall increase street sweeping frequency by prioritizing high traffic commercial routes adjacent to maintained channel with vacuum-assisted sweeper for every 400 linear feet of vegetation that is removed (except for removal of invasive species, e.g., Arundo) within a drainage area. Sweeping shall be conducted in median areas that are not subject to regular sweeping routes, and shall occur at a frequency of at least once per quarter for one calendar year after maintenance.	Los Peñasquitos WMA, Chollas Watershed, Tijuana River WMA	FY13	5 years (ends FY18)	T&SW
<i>Pesticides, Herbicides, and Fertilizer BMP Program</i>						
CSD-43	Require implementation of BMPs to address application, storage, and disposal of pesticides, herbicides, and fertilizers on commercial, industrial, and municipal properties. Includes education, permits, and certifications.	Refer to JRMP (currently under development).	City-wide	FY16	Ongoing	T&SW with Parks and Rec
<i>Retrofit and Rehabilitation in Areas of Existing Development</i>						
CSD-44	Develop and implement a strategy to identify candidate areas of existing development appropriate for retrofitting projects and facilitate the implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program will include methods for identifying and assessing potential retrofit projects in existing development areas. Retrofit project selection will be based upon a variety of factors including proximity to high priority water quality conditions, potential pollutant load removal effectiveness, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	City-wide	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-45	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program (Section 4.2.5.4 and Appendix N) will include methods for identifying and assessing potential stream, channel, or habitat rehabilitation projects in existing development areas. Rehabilitation project selection will be based upon a variety of factors including existing stream or habitat degradation, potential future cumulative stream or habitat impacts, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	Los Peñasquitos WMA	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-46	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program (Section 4.2.5.3 and Appendix M) will include methods for identifying and assessing potential stream, channel, or habitat rehabilitation projects in existing development areas. Rehabilitation project selection will be based upon a variety of factors including existing stream or habitat degradation, potential future cumulative stream or habitat impacts, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	San Dieguito River WMA	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-47	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program (Section 4.2.5.2 and Appendix N) will include methods for identifying and assessing potential stream, channel, or habitat rehabilitation projects in existing development areas. Rehabilitation project selection will be based upon a variety of factors including existing stream or habitat degradation, potential future cumulative stream or habitat impacts, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	Mission Bay WMA	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-48	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program (Section 9.2 and Appendix C) will include methods for identifying and assessing potential stream, channel, or habitat rehabilitation projects in existing development areas. Rehabilitation project selection will be based upon a variety of factors including existing stream or habitat degradation, potential future cumulative stream or habitat impacts, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	Chollas Watershed	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-49	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program (Section 3.2 and Appendix 3A) will include methods for identifying and assessing potential stream, channel, or habitat rehabilitation projects in existing development areas. Rehabilitation project selection will be based upon a variety of factors including existing stream or habitat degradation, potential future cumulative stream or habitat impacts, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	San Diego River WMA	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-50	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Refer to JRMP (currently under development). The Offsite Alternative Compliance Program (Appendix I) will include methods for identifying and assessing potential stream, channel, or habitat rehabilitation projects in existing development areas. Rehabilitation project selection will be based upon a variety of factors including existing stream or habitat degradation, potential future cumulative stream or habitat impacts, and feasibility of implementation. The program will include protocols related to funding mechanisms for project construction and long-term maintenance, payment and credit structures, and water quality equivalency standards.	Tijuana River WMA	TBD	Ongoing	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
Illicit Discharge, Detection, and Elimination (IDDE) Program						
CSD-51	Implement Illicit Discharge, Detection, and Elimination (IDDE) Program per the JRMP. Requirements include: maintaining an MS4 map, using municipal personnel and contractors to identify and report illicit discharges, maintaining a hotline for public reporting of illicit discharges, monitoring MS4 outfalls, and investigating and addressing any illicit discharges.	Refer to JRMP (currently under development).	City-wide	Prior to FY16	Ongoing	T&SW
Public Education and Participation						
CSD-52	Implement a public education and participation program to promote and encourage development of programs, management practices, and behaviors that reduce the discharge of pollutants in storm water prioritized by high-risk behaviors, pollutants of concern, and target audiences.	Refer to JRMP (currently under development).	City-wide	Prior to FY16	Ongoing	T&SW
CSD-53	Continue implementation of a Pet Waste Program.	Pet Waste Program includes outreach on "Scoop the poop", installation of posts for dispensers, distribution of lawn signs, and attendance at dog-related community activities.	City-wide	Prior to FY16	Ongoing	T&SW with Parks and Rec

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-54	Consider installing trash bins, pet waste bag dispensers and pickup services along the Rose Creek Bicycle Path and Rose Canyon Bicycle Path.	The City will consider expansion to current service levels for refuse collection and disposal in conjunction with enhanced education and outreach efforts regarding personal responsibility for trash and litter control. The City will also explore opportunities for the addition of refuse containers that can be served with collection by local community groups including the Friends of Rose Creek or through services contracted by a community initiated Maintenance Assessment District. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) consensus and community support has been achieved.	Mission Bay WMA (Rose Canyon)	Optional	TBD	Friends of Rose Creek
CSD-55	Promote and encourage implementation of designated BMPs in commercial and industrial areas.	Provide education and outreach on BMPs for commercial businesses and industrial facilities.	City-wide Non-residential Areas	Prior to FY16	Ongoing	T&SW with PUD; Funding: Prop 84 and water districts (MWD)
CSD-56	Expand outreach to homeowners' association (HOA) common lands and HOA incentives.	Approaches to consider include: offering incentives to HOAs and maintenance districts to adopt water-conserving/efficiency and stormwater-reduction changes to their landscapes, irrigation, and maintenance; conducting workshops with property managers; providing supplemental standards, inspection, or enforcement for HOA-managed properties.	City-wide	FY16	Ongoing	T&SW
CSD-57	Develop an outreach and training program for property managers responsible for HOAs and maintenance districts.	Approaches to engage HOAs and property managers include: conducting workshops with property managers, providing supplemental standards, inspections or enforcement around HOA properties, and offering incentives to HOAs and maintenance districts to adopt changes to landscapes, irrigation, or maintenance which promote water conservation or stormwater reduction. Property managers are also a target for enhanced outreach.	City-wide	FY16	Ongoing	T&SW
CSD-58	Enhance and expand trash cleanups through community-based organizations involving target audiences.	Increase effectiveness and reach of trash/beach cleanups and community based efforts by engaging community groups to self-define and carry-out trash clean-ups. Longstanding partnerships and sponsorships with I Love A Clean San Diego and others are recommended to be continued and enhanced. To effectively target stream clean-up efforts, focus on partnerships with community organizations which provide strong engagement with target audiences and communities.	City-wide	FY16	Ongoing	T&SW; Park and Rec

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-59	Trash mitigation in the western portion of the Otay River HU.	Longstanding partnerships and sponsorships with I Love A Clean San Diego and Otay Valley Regional Park (OVRP) will be continued and enhanced. The City of San Diego has a Joint Exercise Powers Agreement with the City of Chula Vista and the County of San Diego to manage the OVRP. City of San Diego park rangers perform regular maintenance of the Western OVRP including, but not limited to: overseeing all contract services; patrolling the Park and keeping it as clean and safe as possible; providing educational opportunities for visitors; providing consistent public outreach; maintaining the grounds and facilities; and coordinating with various agencies, public utilities, and other organizations. The park rangers work with WildCoast to educate the local community, and WildCoast supports OVRP's educational programs, such as brochure development and public outreach events like OVRP Day, I Love A Clean San Diego cleanups, and various other events throughout the year.	Otay River HU	Prior to FY16	Ongoing	Parks and Rec
CSD-60	Improve consistency and content of websites to highlight enforceable conditions and reporting methods.	Websites will be updated to provide a user-friendly format and clarity for stormwater violations, conditions which citizens can and should report, and how to make such reports. Examples of reports for common incidents will be developed and posted which may vary locally and regionally. Photographs of allowable practices as well as illegal practices should be shown for utmost clarity. Displaying hotline numbers prominently on the website and near the photographs of illegal practices will ensure that those seeking to report will be able to do so easily. Also ensure hotline number and website are searchable and can be retrieved by simple internet searches.	City-wide	Prior to FY16	Ongoing	T&SW
CSD-61	Develop a targeted education and outreach program for homeowners with orchards or other agricultural land uses on their property.	Educate residents on practices of small-scale or on-site composting to protect local water quality. May include targeted education of owners of chickens. Outreach can be coordinated through the San Diego County Agriculture, Weights, and Measures division.	Los Peñasquitos and San Dieguito River WMAs	FY16	Ongoing	T&SW with County of San Diego Ag, Weights, and Measures
CSD-62	Develop a targeted education and outreach program for homeowners with orchards or other agricultural land uses on their property.	Educate residents on practices of small-scale or on-site composting to protect local water quality. May include targeted education of owners of chickens. Outreach can be coordinated through the San Diego County Agriculture, Weights, and Measures division. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	Tijuana River WMA	Optional	TBD	T&SW with County of San Diego Ag, Weights, and Measures
CSD-63	Enhance school and recreation-based education and outreach.	Develop curriculum and establish distribution in public schools. Includes education on water conservation.	City-wide	FY15	Ongoing	T&SW, PUD with community-based organization
CSD-64	Develop education and outreach to reduce irrigation runoff.	Example approaches to reduce or eliminate irrigation runoff may include: education and outreach, prohibition, enhanced enforcement of existing prohibitions, and pilot projects such as the City of Del Mar's pilot door hanger project.	City-wide	Prior to FY16	Ongoing	T&SW with PUD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-65	Develop regional training for water-using mobile businesses.	Consider development of supplemental standards for mobile businesses including: covered trash enclosures, careful review of washing areas (grading, drainage, landscaping, sanitary sewer system connectivity), and appropriate signage (either through zoning for retrofits or "best fix" approaches, or through BMP Design Manual standards). Businesses may include carpet cleaners, tile installers, plumbers, etc.	City-wide	FY16	Ongoing	T&SW
CSD-66	Enhance education and outreach based on results of effectiveness survey and changing regulatory requirements.	Use effectiveness surveys to enhance existing education and outreach programs while proactively keeping up with and incorporating changing regulatory requirements.	City-wide	FY16	Ongoing	T&SW
CSD-67	Continue to promote and encourage implementation of Integrated Pest Management (IPM) for residents and businesses.	The City will continue to provide education on IPM techniques during presentations and on the City's Think Blue website.	City-wide	Prior to FY16	Ongoing	T&SW
Enforcement Response Plan						
CSD-68	Continue to implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Storm Water Code Enforcement Unit's Standard Operating Procedures (SOPs) - Enforcement Response Plan.	Refer to JRMP (currently under development).	City-wide	Prior to FY16	Ongoing	T&SW with PUD, other City enforcement compliance programs
CSD-69	Increase enforcement of irrigation runoff.	Increased enforcement policies against irrigation runoff will be established in tandem with the education and outreach programs on how these actions lead to pollutant loading. By shifting to property-based inspections irrigation runoff can be handled as enforceable violations once the public is well-informed.	City-wide	FY16	Ongoing	T&SW
CSD-70	Increase enforcement of water-using mobile businesses.	In addition to education, pollution associated with mobile business sources can be handled through policy, code development, inspections of business practices, and enforcement.	City-wide	FY16	Ongoing	T&SW
CSD-71	Increase enforcement of all minimum BMPs for existing residential, commercial, and industrial development.	Increased enforcement of existing development minimum BMPs.	City-wide	FY16	As needed	T&SW
CSD-72	Increase enforcement associated with property-based inspections.	Shifting inspections from businesses-specific to property-based will increase effectiveness and sense of responsibility and ownership. Education and outreach must be followed up with inspection and enforcement of regulations to encourage proper landscape and water conservation strategies.	City-wide	FY16	Ongoing	T&SW
CSD-73	Increase enforcement of sweeping and maintenance of private roads and parking lots in targeted areas.	Refer to Minimum BMPs in JRMP.	City-wide	FY16	Ongoing	T&SW
CSD-74	Increase identification and enforcement of actionable erosion and slope stabilization issues on private property and require stabilization and repair.	Eroding and unstable slope areas on private property (excluding construction sites) will be identified as potential sediment loading sources and subject to enforcement. In the short term, this will target enhanced inspection and enforcement programs to ensure inspectors address erosion and slope instability for the purpose of education.	City-wide	FY16	Ongoing	T&SW

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-75	Coordinate and work with Parks and Recreation, where appropriate, to effectively implement the City's brush management program to ensure that the City is not creating erosion issues.	The Storm Water Department Division will work coordinate with the Parks and Recreation Open Space Division, where appropriate, to develop and implement continue effective implementation of City brush management activities.	Mission Bay WMA	FY16	Ongoing	T&SW with Parks and Rec
Additional Nonstructural Strategies						
CSD-76	Conduct a Comprehensive Benefits Analysis to identify benefits other than water quality that are applicable to each of the specific WQIP strategies.	The analysis identifies which other benefits apply to each strategy, and documents the assumptions making those linkages. The delineation of other benefits to strategies includes a general description of each benefit, and a listing of the assumptions that were made to link those benefits to strategies. In addition, the other benefits are characterized with respect to who is directly affected: the city, local residents, local businesses, or visitors. This analysis may be used as part of the adaptive management process to modify future strategies.	City-wide	FY15	One time	T&SW
CSD-77	Address and clean up trash from transient encampments with collaboration from the Homeless Outreach Team.	Coordinate with the Homeless Outreach Team to respond to transient encampment trash complaints.	City-wide	FY16	Ongoing	T&SW with Police, ESD, Urban Corps, Alpha Project
CSD-78	Continue participating in source reduction initiatives.	Source reduction initiatives are ultimately the most effective measure to remove pollutants from surface waters, where feasible. Bans or progressive phase-outs that may be considered include: leaf blowers, plastic bags, architectural copper (generally a legacy issue), as well as prohibiting or more aggressively regulating vehicle washing. Additional source reduction initiatives to consider include pesticide sales at hardware stores and irrigation supply stores.	City-wide	Prior to FY16	Ongoing	T&SW
CSD-79	Coordinate with Fleet Services to replace City-owned vehicle brake pads with copper-free brake pads as they become commercially available.	Consider legislative mandate and cooperative implementation of copper-free brake pads on city-owned vehicle to reduce pollutant deposition.	City-wide	FY18	Ongoing	T&SW, ESD with PWD (Fleet Services)
CSD-80	Develop and implement a Zinc Reduction Program.	Develop and implement zinc reduction program. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	Chollas Watershed	FY17	2 years (FY17-FY18)	TBD
CSD-81	Develop and implement targeted roof replacement incentive program for Chollas Creek Watershed.	If determined feasible and effective upon completion of development of Zinc Reduction Program, rebates or other incentive programs to replace metal roofs will be considered. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	Chollas Watershed	Optional	TBD	TBD
CSD-82	Proactively monitor for erosion, and complete minor repair and slope stabilization on municipal property.	Actively identify and repair eroding slopes that may be contributing to sediment loading. Prepare an inventory and assessment of eroding areas and their risk to surface waters. Follow assessment with a schedule for ongoing inspection and stabilization (potentially based on a number or percentage of sites annually). Consider Caltrans program as a template.	City-wide	FY16	Ongoing	T&SW
CSD-83	Conduct special studies.	Special studies will be conducted to gather data to identify pollutant sources, appropriate targets, or other information. Includes collaboration with universities.	City-wide	FY16	Ongoing	T&SW

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-84	Lower Tijuana River WMA Sediment Source Characterization Study	The study will provide an inventory and descriptions of sediment sources in the lower Tijuana River Watershed Management Area. The study will utilize a combination of pre-and post-storm visual observations and sediment load measurements. The study will focus on municipal properties; unmaintained yards; dirt roads, trails, and unpaved alleys; large commercial areas; and other significant developed or impervious areas. The study will build upon the findings of the Tijuana River Watershed Technical Support Document for Solids, Turbidity and Trash TMDLs (2010).	Tijuana River WMA	FY16	One time	T&SW, TJ WMA Copermittees
CSD-85	Los Peñasquitos Watershed Special Study	Los Peñasquitos WMA special study will assess sediment loads in the watersheds upstream of the Draft Sediment TMDL compliance monitoring locations. Includes the analysis of sediment water column loads, stream bedload, and air monitoring. Implemented in a phased approach. Monitoring will occur first in the Carroll Canyon subwatershed. The Los Peñasquitos Creek and Carmel Valley Creek subwatersheds will be monitored in subsequent phases. Refer to Section 5.1 for further details.	Los Peñasquitos WMA	FY16	One time	T&SW
CSD-86	Participate in Reference Watershed Study.	The San Diego Regional Reference Stream Study (currently being conducted by the Southern California Coastal Water Research Project). The study will develop numeric targets that account for “natural sources” to establish the concentrations or loads from streams in a minimally disturbed or “reference” condition. Refer to Section 5.1 for further details.	Region-wide	Prior to FY16	One time	T&SW, SCCWRP, Regional copermittees
CSD-87	Participate in Reference Beach Study.	The San Diego Regional Reference Beach Study will develop numeric targets that account for “natural sources” to establish the concentrations or loads from the beach in a minimally disturbed or “reference” condition. The purpose of this monitoring program is to advise the public of potential health risks that could occur with water contact recreation at local beaches. DEH will post a health advisory notice or close a beach when FIB results are above REC-1 water quality standards.	Region-wide (Los Peñasquitos WMA, San Dieguito, Mission Bay, San Diego River)	Prior to FY16	One time	T&SW, SCCWRP, Regional copermittees
CSD-88	Tecolote Creek Quantitative Microbial Risk Assessment (QMRA).	The Tecolote Creek Quantitative Microbial Risk Assessment (QMRA) is currently being conducted in response to the Bacteria TMDL. The study is designed to characterize the predominance of non-human sources in the watershed, quantify the potential risks associated with water contact recreation (e.g., swimming), and, if appropriate, calculate WQOs to reflect the watershed’s site-specific conditions. Refer to Section 5.1 for further details.	Mission Bay WMA (Tecolote Creek)	FY16	One time	T&SW
CSD-89	San Dieguito Source Identification and Prioritization Process	Assess sources of bacteria in the watersheds using the San Diego Bacteria Source Identification and Prioritization Process developed in 2012 as part of the MS4 Permit Report of Waste Discharge process. Focus is on the beach/lagoon area of the San Dieguito River WMA, with inputs from the upper watershed also considered where relevant and necessary to identify sources of bacteria to the beach/lagoon. Refer to Section 5.1 for further details.	San Dieguito River WMA	FY16	One time	T&SW

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-90	Collaborate with City of San Diego PUD and other watershed stakeholders in the Lake Hodges Water Quality Concentration Study. Study will characterize conditions and identify sources.	The City of San Diego's Public Utilities Department will conduct studies that can characterize the nutrient budget or "loading rate" for Lake Hodges. The proper characterization of nutrient loads to Lake Hodges include two components: (1) Uninterrupted sampling during storm events or high water flow to Lake Hodges; and (2) Independent characterizations of nitrogen and phosphorus loads to the reservoir. This strategy will include collaboration with other watershed stakeholders.	San Dieguito River WMA	FY17	2 yrs.	T&SW with PUD; Funding from Prop 50, Prop 80, etc. Other San Dieguito River WMA Responsible Agencies
CSD-91	Using adaptive management, delist the beach segment from the TMDL and Attachment E of the MS4 Permit.	Using the adaptive management process outlined in Section 6, remove 303(d) delisted beach segments from the Bacteria TMDL and Attachment E of the MS4 Permit.	Los Peñasquitos, San Dieguito River, and Mission Bay WMAs	FY16	Ongoing	T&SW, Potential Stakeholders, Coastkeeper
CSD-92	Conduct a Cost of Service Study.	Conduct a Cost of Service Study that will examine the full cost of flood control and storm water strategies needed to comply with storm water regulations for the City of San Diego. The City of San Diego's Watershed Asset Management Plan will be used as the basis for the study.	City-wide	FY16	One time	TBD
CSD-93	Conduct a special study on outfall repair/relocation.	Implement fourth phase of a special study which will identify priority locations for outfall repair/relocation and sediment load reductions.	Los Peñasquitos WMA	FY16	One time	T&SW
CSD-94	Conduct Sustainable Return on Investment (SROI) analysis to estimate strategies' co-benefits and impacts to the public and the private sector on a common scale.	SROI is an economics-based framework for evaluating quantitative and qualitative performance metrics and monetizing them, if possible, along a triple bottom line (i.e. financial, societal, and environmental). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) consensus and community support has been achieved.	City-wide	Optional	TBD	T&SW and public participation
CSD-95	Collaborate with the County, if a County-led regional social services effort is established, to provide sanitation and trash management for individuals experiencing homelessness and determine if the program is suitable and appropriate for jurisdictional needs to meet goals.	Support a non-profit or consortium to provide sanitation services associated with hygiene as well as trash management for persons experiencing homelessness. Rented or purchased shower/sanitary trailers providing mobile showers may be organized at specifically scheduled locations and times. This provision has been proposed as a method for preventing surface water usage for sanitation and bathing, as well as opportunity for outreach and referral by social service agencies. The trash management services will include providing trash bags, trash collection areas, and shower/sanitary facilities at centers which provide daytime shelter to their clients, or on a mobile-basis for known transit camps. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) consensus and community support has been achieved.	City-wide	Optional	TBD	T&SW with Park & Rec, Police

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-96	Identify strategy, resources, and funding to support mapping and assessment of agricultural operations.	Prepare and maintain an inventory of the locations of agricultural operations. Identify agricultural land close to receiving waters and/or MS4 system and conducting a site reconnaissance to assess if discharges are likely to occur and develop a series of follow-up actions specific to those risks. Coordinate with other City of San Diego departments that own and lease land for agricultural uses. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	San Dieguito above Lake Hodges	Optional	TBD	PUD with T&SW
CSD-97	Identify strategy, resources, and funding to support mapping and assessment of agricultural operations.	Prepare and maintain an inventory of the locations of agricultural operations. Identify agricultural land close to receiving waters and/or MS4 system and conducting a site reconnaissance to assess if discharges are likely to occur and develop a series of follow-up actions specific to those risks. Coordinate with other City of San Diego departments that own and lease land for agricultural uses. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	Tijuana River WMA	Optional	TBD	PUD with T&SW
CSD-98	Coordinate with County of San Diego and identify resources and funding to implement a program to target on-site wastewater treatment (septic) systems. May include mapping and risk assessment, inspection, or maintenance practices.	Coordinate with County of San Diego program. The extent, age, and location of on-site systems are generally not well documented. Recommended first step is to inventory and map all of the on-site systems. Techniques involve cross-referencing addresses for customers of central sewer provides with addresses of properties on the associated tax assessor's list, and identifying those addresses without a sewer account. Once on-site systems have been identified, the following parameters can be estimated or analyzed for risk assessment: location on the property, system age (from permit or property tax records), soil and slope conditions, development densities, and proximity to surface and groundwater resources. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	San Dieguito River WMA	Optional	TBD	T&SW with County of San Diego
CSD-99	Participate in an assessment to determine if implementation of an urban tree canopy (UTC) program would benefit water quality and other City goals, where feasible.	Perform a feasibility study to determine if implementing an UTC program would be beneficial to the City's goals. UTC intercepts rainfall through increased coverage of leaves, branches, and stems and reduces runoff from the storm drainage system. Benefits associated with enhancing an UTC include reducing heat island effects and air pollution in addition to aesthetics and community benefits. Where feasible, native trees will be utilized to prevent invasive trees from migrating to open spaces and to conserve water. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	City-wide	Optional	TBD	Planning Dept. with T&SW, SANDAG, and Nature Conservancy

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-100	Conduct a feasibility study to test Permeable Friction Course (PFC), a porous asphalt that overlays impermeable asphalt.	Perform an assessment to determine the feasibility of implementing PFC on City streets. PFC, an overlay of porous asphalt, is an innovative roadway material that improves driving conditions in wet weather and water quality. Placed in a layer 25-50mm thick on top of regular impermeable pavement, PFC allows rainfall to drain within the porous layer rather than on top of the pavement. PFC has also been shown to reduce concentrations of pollutants commonly observed in highway runoff. PFC incorporates stormwater treatment into the roadway surface and does not require additional right-of-way. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	City-wide	Optional	One time	T&SW with DSD, PWD, BIA, NGOs, Copermittees, and Engineering Community
CSD-101	As opportunities arise and funding sources are identified, protect areas that are functioning naturally by avoiding impervious development and degradation on unpaved open space areas, creating permanent open space protections on undeveloped city-owned land, and accepting privately-owned undeveloped open areas.	This strategy may be implemented if there is interest in participation by the public or private entity with current control of the land. Conditions to be met also include 1) identification of partners, if needed (public, private, non-profit), 2) identification of costs and potential sources of funding, 3) final agreement by public or private entity with current control of the land, 4) final agreement by all other participating partners including acceptance by intended land- or asset-owning City department, 5) funding in place, and 6) if it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	City-wide	Optional	TBD	TBD
CSD-102	Add permanent open spaces protections to underdeveloped city-owned land in and on the rim of all canyons, including but not limited to Rose Canyon, San Clemente Canyon, Gilman Canyon, and Carroll Canyon.	This strategy may be implemented if there is interest in participation by the public or private entity with current control of the land. Conditions to be met also include 1) identification of partners, if needed (public, private, non-profit), 2) identification of costs and potential sources of funding, 3) final agreement by public or private entity with current control of the land, 4) final agreement by all other participating partners including acceptance by intended land- or asset-owning City department, 5) funding in place, and 6) if it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	Mission Bay WMA	Optional	TBD	TBD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-103	Add permanent open space protection to undeveloped land in the Mission Bay watershed.	This strategy may be implemented if there is interest in participation by the public or private entity with current control of the land. Conditions to be met also include 1) identification of partners, if needed (public, private, non-profit), 2) identification of costs and potential sources of funding, 3) final agreement by public or private entity with current control of the land, 4) final agreement by all other participating partners including acceptance by intended land- or asset-owning City department, 5) funding in place, and 6) if it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	Mission Bay WMA	Optional	TBD	TBD
CSD-104	Forming a linear "park" from the southern end of Marian Bear Natural Park to the mouth of Rose Creek.	This strategy may be implemented if there is interest in participation by the public or private entity with current control of the land. Conditions to be met also include 1) identification of partners, if needed (public, private, non-profit), 2) identification of costs and potential sources of funding, 3) final agreement by public or private entity with current control of the land, 4) final agreement by all other participating partners including acceptance by intended land- or asset-owning City department, 5) funding in place, and 6) if it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	Mission Bay WMA (Rose Canyon)	Optional	TBD	TBD
CSD-105	Lake Hodges Natural Treatment System Project	Coordinate with watershed stakeholders on Integrated Regional Water Management (IRWM) Proposition 84 funding grant project to model the Lake Hodges watershed (hydrology and water quality loading) to assist in siting locations for nutrient reducing BMPs. Recommendations include using the 85th percentile event for sizing multiuse treatment area BMPs, locating and defining baseflow within key reaches.	San Dieguito River WMA (Lake Hodges)	Optional	TBD	T&SW
CSD-106	Participate in a watershed council or group if one is established.	This strategy may be triggered as 1) partners have been identified and formal MOUs have been developed and 2) consensus and community support has been achieved.	City-wide	Optional	TBD	TBD
CSD-107	City coordination with the Mission Bay Wetland Initiative.	This strategy may be triggered as 1) partners have been identified and formal MOUs have been developed and 2) consensus and community support has been achieved.	Mission Bay WMA	Optional	TBD	TBD
CSD-108	Collaborate with stakeholders to identify funding opportunities including the preparation and competition for grants or involvement with existing groups, such as the Integrated Regional Water Management (IRWM) group.	This strategy may be triggered as 1) partners have been identified and formal MOUs have been developed and 2) consensus and community support has been achieved.	Mission Bay WMA	Optional	TBD	TBD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-109	Prohibit introduction of invasive plants in new development and redevelopment projects.	Coordinate with the City's Development Services Department to continue to prohibit introduction of invasive species such as Arundo donax and Cortaderia selloana for new development or redevelopment projects as specified in the City's municipal code for landscape.	City-wide	Prior to FY16	Ongoing	T&SW with DSD
CSD-110	Collaborate with stakeholders and water agencies in ongoing efforts to address water quality issues in the San Dieguito Watershed as they pertain to MS4 discharges.	Includes participation in Integrated Regional Water Management-led efforts such as coordination and review of grant proposals, research, analysis, studies, modeling.	San Dieguito River WMA	Prior to FY16	Ongoing	T&SW with DSD
CSD-111	Collaborate with watershed stakeholders to plan and implement projects that will further Los Peñasquitos Lagoon restoration efforts and reduce flooding in the lower watershed.	Efforts may include 1) dredging of tidal channels and inlet area to restore and maintain tidal circulation and facilitate draw down times of floodwater in the lagoon and 2) modeling and/or studies to analyze sediment transport and flood control options. This strategy may be triggered as 1) funding is identified and secured, 2) staff resources are identified and secured, 3) partners have been identified and formal MOUs are developed and executed, 4) permits required by regulatory agencies are secured, and 5) consensus and community support is achieved.	Los Peñasquitos WMA	Optional	TBD	T&SW
Green infrastructure						
CSD-112	Green Lot in Kellogg Park.	Green lot of 0.6 acres include infiltrative treatment systems (porous pavement and bioretention areas) to treat a 8.9-acre drainage area. This project has been constructed.	Mission Bay WMA (Scripps)	Prior to FY16	Ongoing	T&SW with PWD
CSD-113	Green infrastructure treatment on public parcels with approximately 2.09 acres of bioretention and 0.55 acres of permeable pavement to treat a 65-acre drainage area.	By FY27, implement at least 2.09 acres of bioretention and 0.55 acres of permeable pavement or equivalent treatment capacity to treat a 65-acre drainage area. Ramp up construction over time, constructing most efficient BMPs first and increasing BMP quantity over time.	Mission Bay WMA (Tecolote Creek)	FY29	Ongoing	T&SW with PWD; Potential to collaborate with transit agencies, public school districts, and state and federal agencies
CSD-114	Del Mar Mesa Neighborhood Park (Project 985)	This site contains small catchment basins and some impervious areas treated by landscape buffers to treat a drainage area of 3.0 acres.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-115	Miramar Water Treatment Plant (Project ID 1177)	Vegetated swales (19,213 SF) are in-place to treat an 18-acre drainage area.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-116	Carroll Canyon Road Extension (Project ID 1007)	Vegetated swale will treat onsite runoff of a drainage area of 5.3 acres, in conjunction with other multiuse treatment areas.	Carroll Canyon Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-117	Mira Mesa Library Green Lot	Permeable pavement and bioretention is in-place in the parking lot and treats a drainage area of 1.22 acres.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-118	Camino Ruiz Neighborhood Park (Project ID 140)	Vegetated swale is in-place to treat on-site runoff of a drainage area of 1.49 acres. Two bioretention areas are proposed to provide treatment of runoff generated by the 85th percentile storm from the parking lot area. These facilities are proposed to be installed within existing landscaping areas. Additional storage is required to capture the 85th percentile runoff volume from the north side of the parking area and is proposed to be provided in permeable pavement parking stalls adjacent to the proposed bioretention area. The retrofit exceeds applicable regulatory requirements by treating runoff from impervious surfaces through bioretention to capture the 85th percentile storm runoff.	Los Peñasquitos Creek Subwatershed	FY15	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-119	Breen Park Site - Development (Project ID 857 & 858 & 859 & 860)	Vegetated swales are in-place to treat on-site runoff of a drainage area of 1.33 acres. Swales adjacent to the parking lot are proposed to be converted into bioretention areas to provide treatment for the runoff generated by the 85th percentile storm. The landscaped area on the north side of the park entrance is proposed to be converted to a bioretention area to provide additional treatment of existing impervious area that currently discharges from the site with no treatment. The retrofit exceeds applicable regulatory requirements by treating runoff from 50,377 more square feet of impervious surface than the initial site design and providing enhanced pollutant removal through bioretention and treatment of the 85th percentile storm.	Los Peñasquitos Creek Subwatershed	FY15	Ongoing	T&SW with PWD
CSD-120	Rancho Peñasquitos Skate park (Project ID 866)	Two small infiltration units (basins/trenches) are used to treat on-site runoff of a drainage area of 2.08 acres.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-121	Fire Station #47 (Project ID 992)	Vegetated swale is in-place to treat on-site runoff of a drainage area of 1 acre.	Carmel Valley Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-122	Torrey Del Mar Neighborhood Park (Project ID 1022)	Two vegetated filter strips and two vegetated swales are in-place to treat on-site runoff of a drainage area of 3.68 acres.	Carmel Valley Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-123	Del Mar Heights Rd Median (Project ID 1018)	A grassed/vegetated swale or grassed/vegetated strip has been proposed for the Del Mar Heights Road median about 350 feet west of the Del Mar Heights and Carmel Valley Road intersection to treat a 0.8-acre drainage area	San Dieguito River WMA (Del Mar Heights Rd and Carmel Valley Rd)	Prior to FY16	Ongoing	T&SW with PWD
CSD-124	Hilltop Community Park- Development of bioretention areas	Two bioretention facilities are proposed to provide for treatment of the majority of the study area, a drainage area of 0.273 acres. An existing landscaped area near Oviedo Way is proposed to be converted to a bioretention area along with the conversion of three landscaped areas within the existing parking lot area to bioretention areas. The parking lot bioretention areas are proposed to be linked by a narrow bioswale between parking stalls. Additional treatment is proposed to be provided through the conversion of 5 parking stalls to permeable pavement. The retrofit exceeds applicable regulatory requirements by treating runoff from impervious surfaces through bioretention to treat the 85th percentile storm runoff.	Carmel Valley Creek Subwatershed	FY15	Ongoing	T&SW with PWD
CSD-125	0.96 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 24-acre drainage area.	Staggered construction, operation, and maintenance of 0.96 acres of bioretention to treat a 24-acre drainage area.	Carmel Valley Creek Subwatershed	FY22	Ongoing	T&SW with PWD; Potential to collaborate with transit agencies, public school districts, and state and federal agencies
CSD-126	17.18 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 429.5-acre drainage area.	Staggered construction, operation, and maintenance of 17.18 acres of bioretention to treat a 429.5-acre drainage area.	Carroll Canyon Creek Subwatershed	FY26	Ongoing	T&SW with PWD; Potential to collaborate with transit agencies, public school districts, and state and federal agencies

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-127	2.40 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 60-acre drainage area.	Staggered construction, operation, and maintenance of 2.40 acres of bioretention to treat a 60-acre drainage area.	Los Peñasquitos Creek Subwatershed	FY26	Ongoing	T&SW with PWD; Potential to collaborate with transit agencies, public school districts, and state and federal agencies
CSD-128	1.33 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 32.5-acre drainage area.	Staggered construction, operation, and maintenance of 1.33 acres of bioretention to treat a 32.5-acre drainage area.	Los Peñasquitos Lagoon Subwatershed	FY28	Ongoing	T&SW with PWD; Potential to collaborate with transit agencies, public school districts, and state and federal agencies
CSD-129	Bioretention at Allied Gardens Recreation Area.	Bioretention designed for Allied Gardens Recreation Area to treat a 4.5-acre drainage area.	San Diego River WMA	FY16	Ongoing	T&SW with PWD
CSD-130	Bioretention at Famosa Slough.	Bioretention planned for Famosa Slough to treat a 10.3-acre drainage area.	San Diego River WMA	FY17	Ongoing	T&SW with PWD
CSD-131	6 Vegetated Swales in Mission Trails Regional Park E. Fortuna Equestrian Staging Area	6 Vegetated Swales planned for Mission Trails Regional Park E. Fortuna Equestrian Staging Area	San Diego River WMA	FY17	Ongoing	T&SW with PWD
CSD-132	20.1 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 502.5-acre drainage area.	Staggered construction, operation, and maintenance of 20.1 acres of bioretention to treat a 502.5-acre drainage area.	San Diego River WMA	FY22	Ongoing	TBD
CSD-133	North 252 Corridor Park Phase I (Dorothy Petway Park) - Project ID 1002	2 vegetated filter strips and one vegetated swale was implemented at I-5 and Rigel Street.	Chollas Watershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-134	43rd and Logan Roadway Improvement - Project ID 1387 (bioretention to treat 0.73 acres of drainage area)	The City has implemented a bioretention BMP on the northeast corner of the intersection of 43rd and Logan Avenue to treat storm water runoff from the northerly half of Logan Avenue from Dominion Street to 43rd Street (about 0.73 acres of drainage area). In addition, there are three sets of curbside filters installed along the southeast corner of 43rd Street and Logan Avenue. Storm water from Logan Avenue flows through a curb opening into a pretreatment device to filter out gross solids and some sediment, and then flows into 12 filtration units connected in series. The curbside filtration units treat 5.76 acres (See Proprietary BMP Strategies). The City has received grant funding to conduct BMP effectiveness monitoring for hydrologic performance and pollutant removal over a two-year period.	Chollas Watershed	FY14	Ongoing	T&SW with PWD
CSD-135	Green lot in Southcrest Park.	Green lot on Newton Ave. west of 43rd to treat a 36-acre drainage area.	Chollas Watershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-136	Central Region Public Health Center replacement of impervious pavement with rubberized porous asphalt.	Central Region Public Health Center replaced 6250 ft ² of impervious pavement with rubberized porous asphalt.	Chollas Watershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-137	Southeast Family Resource Center bio-filtration planters	Southeast Family Resource Center constructed four bio-filtration planters in the parking lot and adjacent to the building to filter runoff from the roof and parking surface. They also installed porous pavers at the entrance and exit of the parking lot.	Chollas Watershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-138	Cabrillo Heights Rain Garden	Rain garden constructed on Kearny Villa Rd. used to treat a 6-acre drainage area.	San Diego River WMA	Prior to FY16	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-139	If interim load reduction goals are not met and additional green infrastructure is required, additional publicly-owned parcels have been identified as potential opportunities for green infrastructure implementation.	Construction, operation, and maintenance of bioretention and permeable pavement. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	Prioritized public parcels in San Dieguito and Tijuana River WMAs	Optional	TBD	T&SW with PWD; Potential to collaborate with transit agencies, public school districts, and state and federal agencies
CSD-140	10.3 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 257.5-acre drainage area.	Staggered construction, operation, and maintenance of 10.3 acres of bioretention to treat a 257.5-acre drainage area.	Chollas Watershed	FY18	Ongoing	T&SW with PWD
Green Streets						
CSD-141	Mt. Abernathy Avenue	Construction, operation and maintenance of 0.06 acres of a green street project at Mt. Abernathy and Camber Drive to treat a 19.6-acre drainage area.	Mission Bay WMA (Tecolote Creek)	Prior to FY16	Ongoing	T&SW with PWD
CSD-142	Bannock Avenue	Construction, operation and maintenance of 0.47 acres of a green street project at Bannock Avenue and Genesee Avenue to treat a 65-acre drainage area.	Mission Bay WMA (Tecolote Creek)	2014	Ongoing	T&SW with PWD
CSD-143	Callado Road	Construction, operation and maintenance of a green street project at Callado Road and Pastoral Street to treat a 9.86-acre drainage area.	San Dieguito River WMA (Callado Rd and Pastoral St)	FY16	FY18	T&SW with PWD
CSD-144	Beta Street	Operation and maintenance of a 0.063 acre green street project at Beta Street and 37th to treat a 2.1-acre drainage area.	Chollas Watershed	FY17	Ongoing	T&SW with PWD
CSD-145	53.2 acres of green streets (26.6 acres of bioretention and 26.6 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 1,746.8-acre drainage area.	Staggered construction, operation and maintenance of 53.2 acres of green streets (26.6 acres of bioretention and 26.6 acres of pervious pavement) to treat a 1746.8-acre drainage area.	Carmel Valley Creek Subwatershed	FY19	Ongoing	T&SW
CSD-146	55.92 acres of green streets (27.96 acres of bioretention and 27.96 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 2,345.5-acre drainage area.	Staggered construction, operation and maintenance of 55.92 acres of green streets (27.96 acres of bioretention and 27.96 acres of pervious pavement) to treat a 2345.5-acre drainage area.	Carroll Canyon Creek Subwatershed	FY23	Ongoing	T&SW
CSD-147	121.42 acres of green streets (60.71 acres of bioretention and 60.71 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 4,128.6-acre drainage area.	Staggered construction, operation and maintenance of 121.42 acres of green streets (60.71 acres of bioretention and 60.71 acres of pervious pavement) to treat a 4,128.6-acre drainage area.	Los Peñasquitos Creek Subwatershed	FY18	Ongoing	T&SW
CSD-148	9.06 acres of green streets (4.53 acres of bioretention and 4.53 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 261.92-acre drainage area.	Staggered construction, operation and maintenance of 9.06 acres of green streets (4.53 acres of bioretention and 4.53 acres of pervious pavement) to treat a 261.92-acre drainage area.	Los Peñasquitos Lagoon Subwatershed	FY28	Ongoing	T&SW

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-149	12.4 acres of green streets have been identified as potential opportunities for green street projects to treat a 309.4-acre drainage area.	This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Optional green street acreage is not a modeled result. These values are drawn from modeling results using a linear regression and assuming that the Los Peñasquitos Lagoon Restoration will achieve a wet sediment load reduction of 15%. These acreages are optional strategies if the restoration project is not pursued or is not providing the anticipated load reductions.	Carmel Valley Creek Subwatershed	Optional	TBD	T&SW
CSD-150	13 acres of green streets have been identified as potential opportunities for green street projects to treat a 323.9-acre drainage area.	This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Optional green street acreage is not a modeled result. These values are drawn from modeling results using a linear regression and assuming that the Los Peñasquitos Lagoon Restoration will achieve a wet sediment load reduction of 15%. These acreages are optional strategies if the restoration project is not pursued or is not providing the anticipated load reductions.	Carroll Canyon Creek Subwatershed	Optional	TBD	T&SW
CSD-151	28.1 acres of green streets have been identified as potential opportunities for green street projects to treat a 701.9-acre drainage area.	This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Optional green street acreage is not a modeled result. These values are drawn from modeling results using a linear regression and assuming that the Los Peñasquitos Lagoon Restoration will achieve a wet sediment load reduction of 15%. These acreages are optional strategies if the restoration project is not pursued or is not providing the anticipated load reductions.	Los Peñasquitos Creek Subwatershed	Optional	TBD	T&SW
CSD-152	2.1 acres of green streets have been identified as potential opportunities for green street projects to treat a 52.3-acre drainage area.	This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Optional green street acreage is not a modeled result. These values are drawn from modeling results using a linear regression and assuming that the Los Peñasquitos Lagoon Restoration will achieve a wet sediment load reduction of 15%. These acreages are optional strategies if the restoration project is not pursued or is not providing the anticipated load reductions.	Los Peñasquitos Lagoon Subwatershed	Optional	TBD	T&SW
CSD-153	32.24 acres of green streets (16.12 acres of bioretention and 16.12 acres of permeable pavement) have been identified as potential opportunities for green street projects to treat a 7260-acre drainage area.	Staggered construction, operation and maintenance of 32.24 acres of green streets (16.12 acres of bioretention and 16.12 acres of permeable pavement) to treat a 7260-acre drainage area.	Chollas Watershed	FY18	Ongoing	T&SW
CSD-154	43.61 acres of green streets have been identified as potential opportunities for green street projects to treat a 1090.25-acre drainage area.	Staggered construction, operation and maintenance of 43.61 acres of green streets to treat a 1090.25-acre drainage area.	San Diego River WMA	FY27	Ongoing	TBD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-155	If interim load reduction goals are not met and additional green infrastructure is required, the additional acreage of bioretention and permeable pavement may be implemented through green streets if potential opportunities for green infrastructure implementation on public parcels are not available.	This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	San Dieguito River and Tijuana River WMAs	Optional	TBD	T&SW with PWD
Multiuse Treatment Areas						
<i>Infiltration and Detention Basins</i>						
CSD-156	Torrey Pines Golf Course Phase 1 (Project ID 1019)	This project consists of four 185' lengths of perforated 48" HDPE in crushed rock envelope for detention and infiltration. This infiltration system will span 0.11 acres and is designed to treat 3.7 acres of land.	Mission Bay WMA (Scripps)	Prior to FY16	Ongoing	T&SW with PWD
CSD-157	Wetland system at Sam Snead All American Golf Course.	Construction, operation and maintenance of a wetland system that would treat about 5,642 acres of drainage area on 11.4 acres of available space (APN 4310700600).	Mission Bay WMA (Tecolote Creek)	FY27	Ongoing	T&SW with PWD
CSD-158	Subsurface detention/infiltration system at Tecolote Canyon Park.	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 6,032 acres of drainage area on 6 acres of available space (APN 4362612100). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Mission Bay WMA (Tecolote Creek)	FY27	Ongoing	T&SW with PWD
CSD-159	Extended Dry Detention system at James Madison High School.	Construction, operation and maintenance of an extended dry detention system that would treat about 97 acres of drainage area on 1.36 acres of available space (APN 3620106900).	Mission Bay WMA (Tecolote Creek)	FY27	Ongoing	T&SW with PWD
CSD-160	Extended Dry Detention system at John Muir School/Anderson School.	Construction, operation and maintenance of an extended dry detention system that would treat about 72 acres of drainage area on 0.98 acres of available space (APN 3612900400).	Mission Bay WMA (Tecolote Creek)	FY27	Ongoing	T&SW with PWD
CSD-161	Subsurface detention/infiltration system at Mt. Everest Academy Elementary School.	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 21 acres of drainage area on 0.22 acres of available space (APN 4190200100). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Mission Bay WMA (Tecolote Creek)	FY27	Ongoing	T&SW with PWD
CSD-162	Ashley Falls	A 10.16 acre retention basin (large scale storm storage) designed to capture 29.7 acres.	Los Peñasquitos Creek Subwatershed	FY19	Ongoing	T&SW with PWD
CSD-163	Flintkote Sediment Detention Basin	A 0.2 acre sediment detention basin designed to treat 35 acres.	Los Peñasquitos Lagoon Subwatershed	FY28	Ongoing	T&SW with PWD
CSD-164	Upper Sorrento Valley Road Sediment Detention Basin	An 11.1 acre sediment detention basin designed to treat 9,306 acres.	Carroll Canyon Creek Subwatershed	FY22	Ongoing	T&SW with PWD
CSD-165	Los Peñasquitos Lagoon Sediment Basin	Construction of a custom-designed basin to maximize sediment interception from Los Peñasquitos Creek, while minimizing effects on surrounding habitat and protecting nearby developments from flooding and preserving view corridors of nearby residents (Los Peñasquitos Lagoon Sediment Basin Monitoring & Maintenance Plan). Total footprint for this basin is 10.16 acres designed to treat 36,375 acres.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-166	A surface infiltration basin can be implemented in open space adjacent to Carmel Knolls Drive upon detailed site assessment.	Construction, operation and maintenance of a 2.3 acre (footprint) surface infiltration basin to treat a drainage area of approximately 301 acres (on 2.3 acres of available space, APN 3044604700).	Carmel Valley Creek Subwatershed	FY22	Ongoing	T&SW with PWD
CSD-167	A subsurface detention basin in Sandburg Park upon detailed site assessment.	Construction, operation and maintenance of a 3.2 acre (footprint) surface detention basin to treat a drainage area of approximately 268 acres (on 5 acres of available space, APN 3093215000). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Los Peñasquitos Creek Subwatershed	FY26	Ongoing	T&SW with PWD
CSD-168	A surface infiltration basin can be implemented in Carmel Creek Neighborhood Park and Elementary School upon detailed site assessment.	Construction, operation and maintenance of a 1.5 acre (footprint) surface infiltration basin to treat a drainage area of approximately 66 acres (on 11.5 acres of available space, APN 3044501200).	Carmel Valley Creek Subwatershed	FY22	Ongoing	T&SW with PWD
CSD-169	A dry extended detention basin can be implemented in Maddox Park upon detailed site assessment.	Construction, operation and maintenance of a 5 acre (footprint) dry extended detention basin to treat a drainage area of approximately 570 acres (on 5 acres of available space, APN 3110304100).	Carroll Canyon Creek Subwatershed	FY22	Ongoing	T&SW with PWD
CSD-170	A subsurface detention basin can be implemented in Dingeman Elementary School and Spring Canyon Park upon detailed site assessment.	Construction, operation and maintenance of a 3.6 acre (footprint) subsurface detention basin to treat a drainage area of approximately 559 acres (on 11 acres of available space, APN 3194721200). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Los Peñasquitos Creek Subwatershed	FY26	Ongoing	T&SW with PWD
CSD-171	A dry extended detention basin in open space next to Canyonside Park Driveway can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 1.8 acre (footprint) dry extended detention basin to treat a drainage area of approximately 181 acres (on 4.6 acres of available space, APN 3094130100).	Los Peñasquitos Creek Subwatershed	FY26	Ongoing	T&SW with PWD
CSD-172	A subsurface detention gallery can be implemented in Del Mar Trails Park upon detailed site assessment.	Construction, operation and maintenance of a 0.1 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 19 acres (on 3 acres of available space, APN 3073316700). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Carmel Valley Creek Subwatershed	FY22	Ongoing	T&SW with PWD
CSD-173	A subsurface detention basin in Mira Mesa High school can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 2.9 acre (footprint) subsurface detention basin to treat a drainage area of approximately 261 acres (on 9.6 acres of available space, APN 3110410200). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Carroll Canyon Creek Subwatershed	FY22	Ongoing	T&SW with PWD
CSD-174	A subsurface detention gallery can be implemented in Sage Canyon Park upon detailed site assessment.	Construction, operation and maintenance of a 0.1 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 14.4 acres (on 7.5 acres of available space; APN 4476123700, APN 4476123600). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Los Peñasquitos Creek Subwatershed	FY26	Ongoing	T&SW with PWD
CSD-175	A dry extended detention basin can be implemented at the Park De La Cruz and Cherokee Point Elementary School site upon detailed site assessment.	Construction, operation and maintenance of a 1.5 acre (footprint) dry extended detention basin to treat a drainage area of approximately 81 acres (on 5.5 acres of available space, APN 3094130100). Location intersection is Wightman Street and 38th Street.	Chollas Watershed	FY18	Ongoing	T&SW with PWD
CSD-176	A subsurface detention basin at Joyner Elementary School can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 1.1 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 87 acres (on 3.3 acres of available space, APN 4760923000). Location intersection is Myrtle Avenue and 43rd street. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Chollas Watershed	FY18	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-177	A subsurface detention basin at Euclid Elementary School can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 0.9 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 76 acres (on 3.3 acres of available space, APN 4714023000). Location intersection is Orange Avenue and Euclid Avenue. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Chollas Watershed	FY18	Ongoing	T&SW with PWD
CSD-178	A subsurface detention basin at Ibarra Elementary School can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 1.4 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 108 acres (on 4.0 acres of available space, APN 4714222800). Location intersection is Orange Avenue and Winona Avenue. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Chollas Watershed	FY18	Ongoing	T&SW with PWD
CSD-179	A subsurface detention basin at Alba Middle/High School can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 0.8 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 62 acres (on 7.0 acres of available space, APN 4721302700). Location intersection is Trojan Avenue and 56th Street. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Chollas Watershed	FY18	Ongoing	T&SW with PWD
CSD-180	A subsurface detention basin at Clay Park can be implemented upon detailed site assessment.	Construction, operation and maintenance of a 0.5 acre (footprint) subsurface detention gallery to treat a drainage area of approximately 26 acres (on 6.0 acres of available space, APN 4674900400). Location intersection is Solita Avenue and Seminole Drive. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Chollas Watershed	FY18	Ongoing	T&SW with PWD
CSD-181	Memorial Park: An infiltration basin has been constructed from the parking on the west side of Memorial Park to treat 1.4 acres of drainage area.	A 0.10 acre infiltration basin has been constructed to treat runoff from the parking on the west side of Memorial Park that has been diverted from the existing storm drain system (1.4 acres of drainage area). Before entering the basin, the runoff passes through a hydrodynamic separator that removes pollutants that settle out or float. Runoff then enters the basin where it infiltrates into the underlying soils. Runoff in excess of the 5-year storm bypasses the BMP via an overflow pipe and returns to the regular storm drain system.	Chollas Watershed	FY14	Ongoing	T&SW with PWD
CSD-182	Central Police Facility - K-9 Facility - Project ID 1011. Detention basin treats 1.1 acres of drainage area.	1 extended/dry detention basin with grass and 2 filtration systems was installed at I-805 and Federal Blvd. Basin treats 1.1 acres of drainage area.	Chollas Watershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-183	Central Police Facility - Vehicle Maintenance - Project ID 1367	1 extended/dry detention basin with grass and 2 filtration systems was installed at Federal Blvd and Home Avenue.	Chollas Watershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-184	Memorial Skateboard Park- Addition of detention vault to treat 0.69 acres of drainage area.	A subsurface detention vault is proposed to be installed in line with the existing 12-inch PVC pipe to capture the runoff generated by the 85th percentile storm. Detained runoff is proposed to be reused to irrigate the athletic fields at Memorial Park. Runoff volume in excess of the detention vault capacity is proposed to overflow into an adjacent subsurface infiltration gallery for additional volume reduction and treatment. This project was initially constructed prior to the 2007 Municipal Storm Water Permit, so implementation of the BMP retrofit recommendations exceeds applicable treatment requirements by treating runoff from 30,000 square feet of impervious surface to the 85th percentile storm.	Chollas Watershed	FY15	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-185	Cesar Chavez Community Center	Proposed retrofit for additional water quality mitigation. Addition of a hydromodification BMP in the grass and shrub area adjacent to the northwest corner of the parking lot extending west behind the baseball field and using the open space in the northwest corner of the park. Diverts storm water runoff from approximately 3.31 acres of drainage area. The retrofit will treat runoff from 144,184 square feet of impervious surface.	Tijuana River WMA	FY15	Ongoing	T&SW with PWD
CSD-186	Otay Mesa Drainage Improvements - Detention Basin	New detention basin per Otay Mesa Community Plan update EIR. Address recurrent roadway flooding problems by improving surface and/or subsurface drainage facilities in conjunction with private development or redevelopment projects. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) permits required by regulatory agencies are secured.	Tijuana River WMA	Optional	TBD	T&SW with PWD
CSD-187	Otay Truck Route Widening Phase 3 - La Media Rd along border fence	New detention basin will be installed on La Media Rd along border fence.	Tijuana River WMA	Prior to FY16	Ongoing	T&SW with PWD
CSD-188	Cleator Park	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 333 acres of drainage area on 3.8 acres of available space (APN 4491100800). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY19	Ongoing	T&SW with PWD
CSD-189	Cabrillo Heights Park	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 238 acres of drainage area on 14 acres of available space (APN 4210500100 and 4213201100). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY19	Ongoing	T&SW with PWD
CSD-190	Presidio Hills Golf Course and Park	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 142 acres of drainage area on 12 acres of available space (APN 4425200800). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY21	Ongoing	T&SW with PWD
CSD-191	Montgomery Field Airport	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 410 acres of drainage area on 410 acres of available space (APN 4212901100). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY21	Ongoing	T&SW with PWD
CSD-192	Ocean Beach Athletic Park and Robb Field	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 315 acres of drainage area on 83 acres of available space (APN 4488000100). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY21	Ongoing	T&SW with PWD
CSD-193	Lower North Shepherd Canyon	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 757 acres of drainage area on 37 acres of available space (APN 3733022600, 3730715500, and 3733022400). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY24	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-194	Springall Academy	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 324 acres of drainage area on 11 acres of available space (APN 4574000400). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY24	Ongoing	T&SW with PWD
CSD-195	Serra Mesa Park and upslope canyon	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 267 acres of drainage area on 20 acres of available space (APN 4213000700 and 421032200). Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	San Diego River WMA	FY24	Ongoing	T&SW with PWD
CSD-196	If interim load reduction goals are not met and additional multiuse treatment areas are required, a subsurface detention/infiltration system can be implemented at Pacific Beach Elementary School upon detailed site assessment.	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 213 acres of drainage area on 1.3 acres of available space (APN 4152711900). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Mission Bay WMA (Scripps)	Optional	TBD	T&SW with PWD
CSD-197	If interim load reduction goals are not met and additional multiuse treatment areas are required, a subsurface detention/infiltration system at La Jolla Community Park upon detailed site assessment.	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 19.3 acres of drainage area on 0.21 acres of available space (APN 3503110200). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Mission Bay WMA (Scripps)	Optional	TBD	T&SW with PWD
CSD-198	If jurisdictional nonstructural and structural strategies do not meet interim targets by interim load reduction goals, a subsurface detention/infiltration system at Bird Rock Elementary School and Bird Rock Park upon detailed site assessment.	Construction, operation and maintenance of a subsurface detention/infiltration system that would treat about 81 acres of drainage area on 0.51 acres of available space (APN 4150700500). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured. Subsurface detention basins would be designed and constructed per all applicable City safety codes and standards.	Mission Bay WMA (Scripps)	Optional	TBD	T&SW with PWD
CSD-199	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin may be implemented on open space across from San Pasqual Union Elementary School can be implemented upon detailed site assessment.	Construction, operation and maintenance of an Infiltration basin that would treat approximately 5,818 acres of drainage area on 19 acres of available space (APN 2410601100). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	San Dieguito River WMA (Rockwood Rd and Public Rd)	Optional	TBD	T&SW with PWD
CSD-200	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin may be implemented on open space between I-15 and West Bernardo Drive.	Construction, operation and maintenance of an infiltration basin that would treat approximately 146 acres of drainage area on 6.0 acres of available space. The site is centrally located in the San Dieguito WMA, between I-15 and West Bernardo Drive (south of the Ed Brown Center). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	San Dieguito River WMA (Between I15 and West Bernardo Dr., south of Ed Brown Center)	Optional	TBD	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-201	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin(s) may be considered on publicly owned open spaces in canyon areas on a case-by-case basis when no other opportunities for load reductions exist.	Construction, operation, and maintenance of infiltration basin(s) in canyon areas. 9 potential canyon sites, owned by the City of San Diego or CSD Open Space Parks, have been identified in San Dieguito WMA that provide up to 1,406 acres of available space (1,885 total parcel acreage). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	San Dieguito River WMA	Optional	TBD	T&SW with PWD
CSD-202	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin(s) may be considered on publicly owned open spaces in canyon areas on a case-by-case basis when no other opportunities for load reductions exist.	Construction, operation, and maintenance of infiltration basin(s) in canyon areas. 8 potential canyon sites, owned by City of San Diego, have been identified in Los Peñasquitos WMA that provide up to 60 acres of available space (out of 174 acres of total parcel acreage). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, and 3) staff resources are identified and secured.	Los Peñasquitos WMA	Optional	TBD	T&SW with PWD
CSD-203	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin(s) may be considered on publicly owned open spaces in canyon areas on a case-by-case basis when no other opportunities for load reductions exist.	Construction, operation, and maintenance of infiltration basin(s) in canyon areas. Twenty potential canyon sites, owned by City of San Diego, have been identified in Mission Bay WMA (Scripps and Tecolote Creek) that provide up to 143 acres of available space (773 total parcel acreage). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) permits required by regulatory agencies are secured.	Mission Bay WMA	Optional	TBD	T&SW with PWD
CSD-204	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin(s) may be considered on publicly owned open spaces in canyon areas on a case-by-case basis when no other opportunities for load reductions exist.	Construction, operation, and maintenance of infiltration basin(s) in canyon areas. Nine potential canyon sites, owned by City of San Diego, have been identified in Chollas watershed that provide up to 30 acres of available space (83 total parcel acreage). This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, 4) partners have been identified and formal MOUs have been developed, and 5) permits required by regulatory agencies are secured.	Chollas Watershed	Optional	Ongoing	T&SW with PWD
Stream, Channel and Habitat Rehabilitation Projects						
CSD-205	El Cuervo del Norte Wetlands	The El Cuervo Norte wetlands were built upon 23.3 acres upstream of the long-term MLS monitoring station. Flows from Los Peñasquitos Creek are diverted into the wetlands, creating the potential for solids to settle out and thus reduce the TSS measured at the MLS.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-206	El Cuervo del Sur Wetlands	On a total of 2.3 acres, the primary mitigation strategy in this plan involve the minor grading (one to three feet) of the Site to create three riparian plant zones. Maintenance activities planned during the maintenance and monitoring program revolve around the establishment of the plantings to a self-sufficient state.	Los Peñasquitos Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-207	Day lighting Cudahy Creek.	This strategy may be triggered as 1) funding to address MS4 discharges is identified and secured, 2) staff resources are identified and secured, 3) partners have been identified and formal MOUs have been developed, 4) permits required by regulatory agencies are secured, 5) consensus and community support has been achieved, and 6) it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	Mission Bay WMA (East side of Mission Bay Park between the Park and Claremont)	Optional	TBD	TBD
CSD-208	Restoration of the riparian corridor under Genesee Avenue Bridge.	Restore more natural flow regimes, wetlands, and riparian corridors. This strategy may be triggered as 1) funding to address MS4 discharges is identified and secured, 2) staff resources are identified and secured, 3) partners have been identified and formal MOUs have been developed, 4) permits required by regulatory agencies are secured, 5) consensus and community support has been achieved, and 6) it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	Mission Bay WMA (Rose Canyon)	Optional	TBD	TBD
CSD-209	If interim load reduction goals are not met and additional stream, channel, and habitat rehabilitation projects are required, implement as needed.	This strategy may be triggered as 1) funding to address MS4 discharges is identified and secured, 2) staff resources are identified and secured, 3) partners have been identified and formal MOUs have been developed, 4) permits required by regulatory agencies are secured, 5) recommendations from the community are identified and consensus and community support has been achieved, and 6) it can be determined that the benefit of preventing increased pollutant loads and minimizing impacts of future growth through land conservation is a more cost effective strategy to meet interim and final numeric goals than other recommended strategies included in this plan (Chesapeake Bay Commission, 2013).	Areas identified during feasibility studies	Optional	TBD	T&SW
Water Quality Improvement BMPs						
<i>Proprietary BMPs</i>						
CSD-210	Torrey Pines Golf Course Phase 1 (Project ID 1019)	9 Kristar FloGards plus drainage inserts have been installed at this site.	Mission Bay WMA (Scripps)	Prior to FY16	Ongoing	T&SW with PWD
CSD-211	Mt. Ashmun Drive (Project ID 1327)	A bioclean baffle box has been installed at this site.	Mission Bay WMA (Tecolote Creek)	Prior to FY16	Ongoing	T&SW with PWD
CSD-212	Rehco Rd.	A HSU unit is used to treat onsite runoff on the north end of Rehco Road.	Carroll Canyon Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-213	North Torrey Pines Road Bridge (Project ID 1017)	Two drainage inserts are used to treat onsite runoff.	Carroll Canyon Creek & Los Peñasquitos Lagoon Subwatersheds	Prior to FY16	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-214	Scripps Ranch Boulevard Median Improvements (Project ID 901)	Two bioclean drainage inserts are used to treat onsite runoff.	Carroll Canyon Creek & Los Peñasquitos Lagoon Subwatersheds	Prior to FY16	Ongoing	T&SW with PWD
CSD-215	Northwest Area Police Substation (Project ID 1365)	A Hydrodynamic Separation System is used to treat onsite runoff.	Los Peñasquitos WMA	Prior to FY16	Ongoing	T&SW with PWD
CSD-216	Peñasquitos West Grading (Project ID 1051)	Two Hydrodynamic Separation Systems are used to treat onsite runoff.	Carmel Valley Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-217	Carmel Valley Road Enhancements (Project ID 860)	Hydrodynamic Separation Systems are used to treat onsite runoff.	Carmel Valley Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-218	Genesee Widening (Project ID 900)	Hydrodynamic Separation Systems are used to treat onsite runoff.	Carroll Canyon Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-219	Mira Sorrento Place and Vista Sorrento Parkway (Project ID 850)	Hydrodynamic Separation Systems are used to treat onsite runoff.	Carroll Canyon Creek Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-220	Ocean Air Park (Project ID 906)	Hydrodynamic Separation Systems are used to treat onsite runoff.	Los Peñasquitos Lagoon Subwatershed	Prior to FY16	Ongoing	T&SW with PWD
CSD-221	Black Mountain Ranch - Northern Areas, Project ID 1386	Existing project - constructed BMPs include 4 drainage inserts, 2 filtration systems and 10 hydrodynamic separation systems.	San Dieguito River WMA (Black Mountain Ranch)	Prior to FY16	Ongoing	T&SW with PWD
CSD-222	Black Mtn. Ranch Community Park (discretionary) - Project ID 1006	A hydrodynamic separation system and 3 drainage inserts were installed at Black Mountain Ranch Community Park under the west corner of the property, behind the baseball fields and near an existing concrete swale.	San Dieguito River WMA (Black Mountain Ranch Community Park)	Prior to FY16	Ongoing	T&SW with PWD
CSD-223	Camino Del Sur and Maranatha Dr. - Project ID 139	A hydrodynamic separation system was installed along the north side of Camino Del Sur, just west of Maranatha Drive.	San Dieguito River WMA (North side of Camino Del Sur, west of Maranatha Dr.)	Prior to FY16	Ongoing	T&SW with PWD
CSD-224	Fire Station #46 Santaluz - Project ID 991	Installed 4 drainage inserts at Fire Station #46 near the entrance of parking lot off of Lazanja Drive.	San Dieguito River WMA (Fire Station #46)	Prior to FY16	Ongoing	T&SW with PWD
CSD-225	Rancho Bernardo Community Park Dog Off-Leash Area - Project ID 865	A drainage insert was installed at Rancho Bernardo Community Park near the Dog Off-Leash Area.	San Dieguito River WMA (Rancho Bernardo Community Park)	Prior to FY16	Ongoing	T&SW with PWD
CSD-226	43rd and Logan Roadway Improvement - Project ID 1387 (filtration units treat 5.76 acres)	Three curbside filtration units were installed along S 43rd street and Logan Avenue. The curbside filtration units treat a total of 5.76 acres. A bioretention BMP is also implemented on this site (See MUTA strategies).	Chollas (Along S 43rd street between Logan Avenue and Keeler Avenue)	FY14	Ongoing	T&SW with PWD
CSD-227	N Chollas Community Park Phase 1B - Project ID 855	4 drainage inserts were installed in Chollas Lake Park near College Grove Drive and Caminito Chollas.	Chollas Lake Park	Prior to FY14	Ongoing	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-228	Lisbon Street Roadway and Utility Improvements - Project ID 858	2 drainage inserts were installed at Imperial Avenue and Lisbon Street.	Chollas (Imperial Avenue and Lison Street)	Prior to FY14	Ongoing	T&SW with PWD
CSD-229	Fire Station #12 - Project ID 989	1 downspout filter and 10 drainage inserts were installed at Willie James Jones Avenue and Imperial Avenue.	Chollas (Willie James Jones Avenue and Imperial Avenue)	Prior to FY14	Ongoing	T&SW with PWD
CSD-230	Rigel St Bridge Replacement - Project ID 1008	5 drainage inserts were installed at Rigel Street and Main Street.	Chollas (Rigel Street and Main Street)	Prior to FY14	Ongoing	T&SW with PWD
CSD-231	Otay Mesa/ Nestor Library- Development of treatment unit.	Because of the limited space available at the site and geotechnical issues associated with the proximity to steep slopes, it is recommended that a Filterra type or approved equivalent treatment unit be retrofitted to treat flows from the 85th percentile storm. The retrofit exceeds applicable regulatory requirements by treating runoff from 11,800 more square feet of impervious surface than the initial site design and by treating flows from the 85th percentile storm.	Los Peñasquitos WMA	FY15	Ongoing	T&SW with PWD
CSD-232	3 Drain Inserts in Complex Street Green Mall.	3 drainage inserts planned for implementation in Complex Street Green Mall.	San Diego River WMA	FY17	Ongoing	T&SW with PWD
CSD-233	Park Ridge hydrodynamic separator	A hydrodynamic separator used to treat onsite runoff of 37.6 acres.	San Diego River WMA	FY17	Ongoing	T&SW with PWD
CSD-234	El Capitan Reservoir	3 drainage inserts planned for implementation in El Capitan Reservoir.	San Diego River WMA	Prior to FY16	Ongoing	T&SW with PWD
CSD-235	Murray Reservoir	5 drainage inserts planned for implementation in Murray Reservoir.	San Diego River WMA	Prior to FY16	Ongoing	T&SW with PWD
CSD-236	San Vicente Reservoir	1 drainage insert planned for implementation in San Vicente Reservoir.	San Diego River WMA	Prior to FY16	Ongoing	T&SW with PWD
CSD-237	Serra Mesa/Kearny Mesa Library	A hydrodynamic separator used to treat onsite runoff at Serra Mesa/Kearny Mesa Library.	San Diego River WMA	Prior to FY16	Ongoing	T&SW with PWD
CSD-238	Fire Station #29 - 198 West San Ysidro Blvd.	4 drainage inserts planned for implementation on San Ysidro Blvd.	Tijuana River WMA	Prior to FY16	Ongoing	T&SW with PWD
Dry Weather Flow Separation and Treatment Projects						
CSD-239	Dry-weather flow diversion	A dry-weather flow diversion is constructed near 7920 Princess St.	Mission Bay WMA (Scripps)	2014	Ongoing	T&SW with PWD
CSD-240	Dry-weather flow diversion	A dry-weather flow diversion is constructed near 1624 Torrey Pines Rd.	Mission Bay WMA (Scripps)	2014	Ongoing	T&SW with PWD
CSD-241	Dry-weather flow diversion	A dry-weather flow diversion is constructed near Torrey Pines Rd & Charlot.	Mission Bay WMA (Scripps)	2014	Ongoing	T&SW with PWD
CSD-242	Dry-weather flow diversion	A dry-weather flow diversion is constructed near Camino del Oro & El Paseo.	Mission Bay WMA (Scripps)	2014	Ongoing	T&SW with PWD
CSD-243	Dry-weather flow diversion	A dry-weather flow diversion is replaced near Avenida De La Playa.	Mission Bay WMA (Scripps)	2015	Ongoing	T&SW with PWD
CSD-244	Dry-weather flow diversion	Limited low-flow storm drain inlets in Lindberg Park. Project is on-hold, according to Sumer Hasenin (interview).	Mission Bay WMA (Tecolote Creek)	2021-2022	2023 - on-going	T&SW with PWD

ID	Strategy	Implementation Approach	Location	Implementation or Construction Year Start	Frequency of Implementation	Responsible City Department and Other Collaborating Departments or Agencies
CSD-245	If interim load reduction goals are not met and additional dry weather flow separation and treatment projects are required, implement as needed.	Construction of dry weather flow separation and treatment projects, where identified. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, and 4) permits required by regulatory agencies are secured.	Downstream reaches where persistent dry weather flows have been observed	Optional	TBD	T&SW with PWD
Trash Segregation						
CSD-246	If interim load reduction goals are not met and additional trash segregation projects are required, implement as needed.	Construction of trash segregation (Trash Guards, etc.) projects, where identified. This strategy may be triggered as 1) interim goals are not met, 2) funding to address MS4 discharges is identified and secured, 3) staff resources are identified and secured, and 4) permits required by regulatory agencies are secured.	High-loading areas city-wide	Optional	TBD	T&SW with PWD
Additional Opportunities						
CSD-247	Participate in restorative efforts for the Los Peñasquitos Lagoon in collaboration with TMDL Responsible Parties and other stakeholders.	Collaborate with TMDL Responsible Parties and other stakeholders to promote and support the restoration of the Los Peñasquitos Lagoon. Efforts will be coordinated with the Lagoon Enhancement Program currently being updated by the Los Peñasquitos Lagoon Foundation. This effort will require that 1) funding to address MS4 discharges is identified and secured, 2) staff resources are identified and secured, 3) partners are identified and formal MOUs are developed and executed, 4) permits required by regulatory agencies are secured, and 5) consensus and community support are achieved.	Los Peñasquitos Lagoon Subwatershed	FY20	Ongoing	T&SW with TMDL Responsible Parties and Los Peñasquitos WMA stakeholders
CSD-248	Through adaptive management and additional analysis in the future, the City will identify and implement one or more of the following opportunities to meet numeric goals: 1) MS4 outfall repair and relocation, 2) slope stabilization, 3) stream restoration, 4) implementation of sediment detention basins upstream of Los Peñasquitos Lagoon or 5) new strategies not yet identified.	Through adaptive management and additional analysis in the future, the City will identify and implement one or more of the following opportunities to meet numeric goals: 1) MS4 outfall repair and relocation, 2) slope stabilization, 3) stream restoration, 4) implementation of sediment detention basins upstream of Los Peñasquitos Lagoon or 5) new strategies not yet identified.	Los Peñasquitos WMA	FY28	Ongoing	T&SW

DSD= Development Services Department; PUD = Public Utilities Department; PWD = Public Works Department; T&SW = Transportation and Storm Water Division; WAMP = Watershed Asset Management Plan; "Refer to Section X" will be updated upon submittal of the City's JRMP in June 2015; TBD = will be determined during the next fiscal year.

Reference: Chesapeake Bay Commission. 2013. *Crediting Conservation: Accounting for the Water Quality Value of Conserved Lands Under the Chesapeake Bay TMDL*. Available online at <http://www.chesbay.us/Publications/CreditingConservationReport.pdf>. June.

Table 2. City of San Diego Annual Schedule through FY2035

Construction
 Ongoing Implementation/ O&M
 As needed/Design

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
						1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3
						7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	3
Jurisdictional Strategies																								
Development Planning																								
All Development Projects																								
CSD-1	Establish guidelines and standards for all development projects; provide technical support related to implementation of source control BMPs to minimize pollutant generation at each project and implement LID BMPs to maintain or restore hydrology of the area or implement easements to protect water quality, where applicable and feasible. Includes internal coordination and collaboration between City departments (DSD, PWD, and Engineering) to improve success and long-term benefits of BMPs.	City-wide	Prior to FY16	Ongoing																				
CSD-2	Investigation and research of emerging technology.	City-wide	Prior to FY16	As Needed																				
CSD-3	Approve and implement a green infrastructure policy.	City-wide on public parcels	FY16 (Begin)	As Needed																				
CSD-4	Develop Design Standards for Public LID BMPs.	City-wide	FY14-FY15	As Needed																				
CSD-5	Outreach to impacted industry regarding minimum BMP requirement updates.	City-wide	FY15	As Needed																				
CSD-6	Train staff on LID regulatory changes and LID practices.	City-wide	FY16		As Needed																			
CSD-7	Amend municipal code and ordinances, including zoning ordinances, to facilitate and encourage LID opportunities to support compliance with the MS4 Permit and TMDLs in a reasonable manner. Ensure consistency with the City of San Diego's BMP Design Manual. Update the Storm Water Standards Manual accordingly.	City-wide	FY15	As Needed																				
CSD-8	Create a manual that outlines right-of-way design standards.	City-wide	FY15	One time																				
CSD-9	Provide technical education and outreach to the development community on the design and implementation requirements of the MS4 Permit and Water Quality Improvement Plan requirements.	City-wide	Prior to FY16	Ongoing																				
Priority Development Projects (PDPs)																								
CSD-10	For PDPs, provide technical support to other City departments to ensure implementation of on-site structural BMPs to control pollutants and manage hydromodification by developing City wide storm water development standards and design guidelines.	City-wide	FY16		Ongoing																			
CSD-11	Institute a program to verify and enforce maintenance and performance of treatment control BMPs.	City-wide	FY16		Ongoing																			
CSD-12	Update BMP Design Manual procedures to determine nature and extent of storm water requirements applicable to development projects and to identify conditions of concern for selecting, designing, and maintaining appropriate structural BMPs.	City-wide	FY15	Cycle																				

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																		
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CSD-13	Amend BMP Design Manual for trash areas. Require full four-sided enclosure, siting away from storm drains and cover. Consider the retrofit requirement.	City-wide	FY15	One time																				
CSD-14	Amend BMP Design Manual for animal-related facilities, such as such as animal shelters, "doggie day care" facilities, veterinary clinics, breeding, boarding and training facilities, groomers, and pet care stores.	City-wide	FY15	One time																				
CSD-15	Amend BMP Design Manual for nurseries and garden centers.	City-wide	FY15	One time																				
CSD-16	Amend BMP Design Manual for auto-related uses.	City-wide	FY15	One time																				
CSD-17	Develop and administer an alternative compliance program for on-site structural BMP implementation (includes identifying Watershed Management Area Analysis [WMAA] candidate projects). Refer to Section 4.2.5.	City-wide	FY15	Ongoing																				
CSD-18	Create a fund that allows habitat acquisition, protection enhancement, and restoration in conjunction with other cooperating entities including community groups, academic institutions, state county, and federal agencies, etc.	City-wide	Optional																					
Construction Management																								
CSD-19	Coordinate with other City departments to promote and confirm a thorough understanding of requirements for implementing temporary BMPs that control sediment and other pollutants during the construction phase of projects. Included in that understanding are requirements to inspect at appropriate frequencies and effectively enforce requirements through process controlled by other City departments.	City-wide	FY16		Ongoing																			
Existing Development																								
Commercial, Industrial, Municipal, and Residential Facilities and Areas																								
CSD-20	Administer a program to require implementation of minimum BMPs for existing development (commercial, industrial, municipal, and residential) that are specific to the facility, area types, and PGAs, as appropriate. Includes inspection of existing development at appropriate frequencies and using appropriate methods.	City-wide	FY16		Ongoing																			
CSD-21	Update minimum BMPs for existing residential, commercial, and industrial development. Specific updates to BMPs include required street sweeping, catch basin cleaning, and maintenance of private roads and parking lots in targeted areas.	City-wide	FY15	Cycle																				
CSD-22	Outreach to property managers and trash haulers to elevate the emphasis of power washing as a pollutant source.	City-wide Residential, commercial and industrial areas	FY15	Ongoing																				
CSD-23	Implement property based inspections.	City-wide	Prior to FY16	Ongoing																				
CSD-24	Review policies and procedures to ensure discharges from swimming pools meet permit requirements.	City-wide	FY15	As Needed																				
CSD-25	Promote and encourage implementation of designated BMPs for residential and non-residential areas.	City-wide Residential and Commercial Areas	Prior to FY16	Ongoing																				
CSD-26	Residential and Commercial BMP: Rain Barrel	City-wide Residential Areas	Prior to FY16	Ongoing																				
CSD-27	Residential and Commercial BMP: Grass Replacement	City-wide Residential and Commercial Areas	Prior to FY16	Ongoing																				

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY	FY
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	33
CSD-28	Residential and Commercial BMP: Downspout Disconnect	City-wide Residential and Commercial Areas	FY16		Ongoing																		
CSD-29	Residential and Commercial BMP: Microirrigation	City-wide Residential Areas	Prior to FY16	Ongoing																			
CSD-30	Provide Onsite Water Conservation Surveys.	City-wide Residential and Commercial Areas	Prior to FY16	Ongoing																			
MS4 Infrastructure																							
CSD-31	Implementation of operation and maintenance activities (inspection and cleaning) for MS4 and related structures (catch basins, storm drain inlets, channels as allowed by resource agencies, detention basins, etc.) for water quality improvement and for flood control risk management.	City-wide	FY16		Ongoing																		
CSD-32	Enhanced catch basin cleaning to increase pollutant removal (up to 4 times per year) in the rainy season.	Los Peñasquitos and Chollas WMAs: High priority areas identified in pilot study	FY16		Ongoing																		
CSD-33	Enhanced catch basin cleaning to increase pollutant removal (between 2-4 times per year in medium priority areas in the rainy season).	Tijuana River WMA: Medium priority areas identified in pilot study	FY16		Ongoing																		
CSD-34	Increased frequency of catch basin inspection and as-needed cleaning.	Los Peñasquitos WMA (31 open channel segments), Chollas Watershed (48 open channel segments), Tijuana River WMA (15 open channel segments)	FY13																				
CSD-35	Proactively repair and replace MS4 components to provide source control from MS4 infrastructure.	City-wide	FY16		Ongoing																		
CSD-36	Coordinate with other City departments (PUD) to implement controls to prevent infiltration of sewage into the MS4 from leaking sanitary sewers.	City-wide	FY16		Ongoing																		
CSD-37	Identify sewer leaks and areas for sewer pipe replacement prioritization.	City-wide	FY16		As Needed																		
Roads, Street, and Parking Lots																							
CSD-38	Implement operation and maintenance activities for public streets, unpaved roads, paved roads, and paved highways.	City-wide	FY16		Ongoing																		
CSD-39	Outreach to street sweeping enhancement-targeted areas.	Los Peñasquitos WMA and Chollas Watershed	FY16		Ongoing																		
CSD-40	Enhance street sweeping through equipment replacement (replace mechanical sweepers with regenerative air sweepers) and route optimization (sweep all routes twice per month) in targeted areas.	Los Peñasquitos WMA and Chollas Watershed	FY17			Ongoing																	
CSD-41	Initiate sweeping of medians on high-volume arterial roadways.	City-wide	FY17			Ongoing																	

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																		
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CSD-42	Implement additional street sweeping (Settlement Agreement).	Los Peñasquitos WMA, Chollas Watershed, Tijuana River WMA	FY13																					
Pesticides, Herbicides, and Fertilizer BMP Program																								
CSD-43	Require implementation of BMPs to address application, storage, and disposal of pesticides, herbicides, and fertilizers on commercial, industrial, and municipal properties. Includes education, permits, and certifications.	City-wide	FY16		Ongoing																			
Retrofit and Rehabilitation in Areas of Existing Development																								
CSD-44	Develop and implement a strategy to identify candidate areas of existing development appropriate for retrofitting projects and facilitate the implementation of such projects.	City-wide	TBD																					
CSD-45	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Los Peñasquitos WMA	TBD																					
CSD-46	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	San Dieguito River WMA	TBD																					
CSD-47	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Mission Bay WMA	TBD																					
CSD-48	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Chollas Watershed	TBD																					
CSD-49	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	San Diego River WMA	TBD																					
CSD-50	Develop and implement a strategy to identify candidate areas of existing development for stream, channel, or habitat rehabilitation projects and facilitate implementation of such projects.	Tijuana River WMA	TBD																					
Illicit Discharge, Detection, and Elimination (IDDE) Program																								
CSD-51	Implement Illicit Discharge, Detection, and Elimination (IDDE) Program per the JRMP. Requirements include: maintaining an MS4 map, using municipal personnel and contractors to identify and report illicit discharges, maintaining a hotline for public reporting of illicit discharges, monitoring MS4 outfalls, and investigating and addressing any illicit discharges.	City-wide	Prior to FY16	Ongoing																				
Public Education and Participation																								
CSD-52	Implement a public education and participation program to promote and encourage development of programs, management practices, and behaviors that reduce the discharge of pollutants in storm water prioritized by high-risk behaviors, pollutants of concern, and target audiences.	City-wide	Prior to FY16	Ongoing																				

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F		
						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
						1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
						7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3	3	3	3
CSD-53	Continue implementation of a Pet Waste Program.	City-wide	Prior to FY16	Ongoing																						
CSD-54	Consider installing trash bins, pet waste bag dispensers and pickup services along the Rose Creek Bicycle Path and Rose Canyon Bicycle Path.	Mission Bay WMA (Rose Canyon)	Optional																							
CSD-55	Promote and encourage implementation of designated BMPs in commercial and industrial areas.	City-wide Non-residential Areas	Prior to FY16	Ongoing																						
CSD-56	Expand outreach to homeowners' association (HOA) common lands and HOA incentives.	City-wide	FY16		Ongoing																					
CSD-57	Develop an outreach and training program for property managers responsible for HOAs and maintenance districts.	City-wide	FY16		Ongoing																					
CSD-58	Enhance and expand trash cleanups through community-based organizations involving target audiences.	City-wide	FY16		Ongoing																					
CSD-59	Trash mitigation in the western portion of the Otay River HU.	Otay River HU	Prior to FY16	Ongoing																						
CSD-60	Improve consistency and content of websites to highlight enforceable conditions and reporting methods.	City-wide	Prior to FY16	Ongoing																						
CSD-61	Develop a targeted education and outreach program for homeowners with orchards or other agricultural land uses on their property.	Los Peñasquitos and San Dieguito River WMAs	FY16		Ongoing																					
CSD-62	Develop a targeted education and outreach program for homeowners with orchards or other agricultural land uses on their property.	Tijuana River WMA	Optional																							
CSD-63	Enhance school and recreation-based education and outreach.	City-wide	FY15	Ongoing																						
CSD-64	Develop education and outreach to reduce irrigation runoff.	City-wide	Prior to FY16	Ongoing																						
CSD-65	Develop regional training for water-using mobile businesses.	City-wide	FY16		Ongoing																					
CSD-66	Enhance education and outreach based on results of effectiveness survey and changing regulatory requirements.	City-wide	FY16		Ongoing																					
CSD-67	Continue to promote and encourage implementation of Integrated Pest Management (IPM) for residents and businesses.	City-wide	Prior to FY16	Ongoing																						
Enforcement Response Plan																										
CSD-68	Continue to implement escalating enforcement responses to compel compliance with statutes, ordinances, permits, contracts, orders, and other requirements for IDDE, development planning, construction management, and existing development in the Storm Water Code Enforcement Unit's Standard Operating Procedures (SOPs) - Enforcement Response Plan.	City-wide	Prior to FY16	Ongoing																						
CSD-69	Increase enforcement of irrigation runoff.	City-wide	FY16		Ongoing																					
CSD-70	Increase enforcement of water-using mobile businesses.	City-wide	FY16		Ongoing																					
CSD-71	Increase enforcement of all minimum BMPs for existing residential, commercial, and industrial development.	City-wide	FY16		As needed																					
CSD-72	Increase enforcement associated with property-based inspections.	City-wide	FY16		Ongoing																					
CSD-73	Increase enforcement of sweeping and maintenance of private roads and parking lots in targeted areas.	City-wide	FY16		Ongoing																					
CSD-74	Increase identification and enforcement of actionable erosion and slope stabilization issues on private property and require stabilization and repair.	City-wide	FY16		Ongoing																					

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Additional Nonstructural Strategies																							
CSD-75	Coordinate and work with Parks and Recreation, where appropriate, to effectively implement the City's brush management program to ensure that the City is not creating erosion issues.	Mission Bay WMA	FY16		Ongoing																		
CSD-76	Conduct a Comprehensive Benefits Analysis to identify benefits other than water quality that are applicable to each of the specific WQIP strategies.	City-wide	FY15	One time																			
CSD-77	Address and clean up trash from transient encampments with collaboration from the Homeless Outreach Team.	City-wide	FY16		Ongoing																		
CSD-78	Continue participating in source reduction initiatives.	City-wide	Prior to FY16	Ongoing																			
CSD-79	Coordinate with Fleet Services to replace City-owned vehicle brake pads with copper-free brake pads as they become commercially available.	City-wide	FY18				Ongoing																
CSD-80	Develop and implement a Zinc Reduction Program.	Chollas Watershed	FY17																			If triggered, begin planning, acquiring funding and resources	
CSD-81	Develop and implement targeted roof replacement incentive program for Chollas Creek Watershed.	Chollas Watershed	Optional																			If triggered, begin planning, acquiring funding and resources	
CSD-82	Proactively monitor for erosion, and complete minor repair and slope stabilization on municipal property.	City-wide	FY16		Ongoing																		
CSD-83	Conduct special studies.	City-wide	FY16		Ongoing																		
CSD-84	Lower Tijuana River WMA Sediment Source Characterization Study	Tijuana River WMA	FY16		One time																		
CSD-85	Los Peñasquitos Watershed Special Study	Los Peñasquitos WMA	FY16		One time																		
CSD-86	Participate in Reference Watershed Study.	Region-wide	Prior to FY16	One time																			
CSD-87	Participate in Reference Beach Study.	Region-wide (Los Peñasquitos WMA, San Dieguito, Mission Bay, San Diego River)	Prior to FY16	One time																			
CSD-88	Tecolote Creek Quantitative Microbial Risk Assessment (QMRA).	Mission Bay WMA (Tecolote Creek)	FY16		One time																		
CSD-89	San Dieguito Source Identification and Prioritization Process	San Dieguito River WMA	FY16		One time																		
CSD-90	Collaborate with City of San Diego PUD and other watershed stakeholders in the Lake Hodges Water Quality Concentration Study. Study will characterize conditions and identify sources.	San Dieguito River WMA	FY17			Ongoing																	
CSD-91	Using adaptive management, delist the beach segment from the TMDL and Attachment E of the MS4 Permit.	Los Peñasquitos, San Dieguito River, and Mission Bay WMAs	FY16		Ongoing																		

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
CSD-92	Conduct a Cost of Service Study.	City-wide	FY16		One time																	
CSD-93	Conduct a special study on outfall repair/relocation.	Los Peñasquitos WMA	FY16		One time																	
CSD-94	Conduct Sustainable Return on Investment (SROI) analysis to estimate strategies' co-benefits and impacts to the public and the private sector on a common scale.	City-wide	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-95	Collaborate with the County, if a County-led regional social services effort is established, to provide sanitation and trash management for individuals experiencing homelessness and determine if the program is suitable and appropriate for jurisdictional needs to meet goals.	City-wide	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-96	Identify strategy, resources, and funding to support mapping and assessment of agricultural operations.	San Dieguito above Lake Hodges	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-97	Identify strategy, resources, and funding to support mapping and assessment of agricultural operations.	Tijuana River WMA	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-98	Coordinate with County of San Diego and identify resources and funding to implement a program to target on-site wastewater treatment (septic) systems. May include mapping and risk assessment, inspection, or maintenance practices.	San Dieguito River WMA	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-99	Participate in an assessment to determine if implementation of an urban tree canopy (UTC) program would benefit water quality and other City goals, where feasible.	City-wide	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-100	Conduct a feasibility study to test Permeable Friction Course (PFC), a porous asphalt that overlays impermeable asphalt.	City-wide	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-101	As opportunities arise and funding sources are identified, protect areas that are functioning naturally by avoiding impervious development and degradation on unpaved open space areas, creating permanent open space protections on undeveloped city-owned land, and accepting privately-owned undeveloped open areas.	City-wide	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-102	Add permanent open spaces protections to underdeveloped city-owned land in and on the rim of all canyons, including but not limited to Rose Canyon, San Clemente Canyon, Gilman Canyon, and Carroll Canyon.	Mission Bay WMA	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-103	Add permanent open space protection to undeveloped land in the Mission Bay watershed.	Mission Bay WMA	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-104	Forming a linear "park" from the southern end of Marian Bear Natural Park to the mouth of Rose Creek.	Mission Bay WMA (Rose Canyon)	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-105	Lake Hodges Natural Treatment System Project	San Dieguito River WMA (Lake Hodges)	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-106	Participate in a watershed council or group if one is established.	City-wide	Optional																			If triggered, begin planning, acquiring funding and resources
CSD-107	City coordination with the Mission Bay Wetland Initiative.	Mission Bay WMA	Optional																			If triggered, begin planning, acquiring funding and resources

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																		
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	33	34
CSD-125	0.96 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 24-acre drainage area.	Carmel Valley Creek Subwatershed	FY22																					
CSD-126	17.18 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 429.5-acre drainage area.	Carroll Canyon Creek Subwatershed	FY26																					
CSD-127	2.40 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 60-acre drainage area.	Los Peñasquitos Creek Subwatershed	FY26																					
CSD-128	1.33 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 32.5-acre drainage area.	Los Peñasquitos Lagoon Subwatershed	FY28																					
CSD-129	Bioretention at Allied Gardens Recreation Area.	San Diego River WMA	FY16																					
CSD-130	Bioretention at Famosa Slough.	San Diego River WMA	FY17																					
CSD-131	6 Vegetated Swales in Mission Trails Regional Park E. Fortuna Equestrian Staging Area	San Diego River WMA	FY17																					
CSD-132	20.1 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 502.5-acre drainage area.	San Diego River WMA	FY22																					
CSD-133	North 252 Corridor Park Phase I (Dorothy Petway Park) - Project ID 1002	Chollas Watershed	Prior to FY16																					
CSD-134	43rd and Logan Roadway Improvement - Project ID 1387 (bioretention to treat 0.73 acres of drainage area)	Chollas Watershed	FY14																					
CSD-135	Green lot in Southcrest Park.	Chollas Watershed	Prior to FY16																					
CSD-136	Central Region Public Health Center replacement of impervious pavement with rubberized porous asphalt.	Chollas Watershed	Prior to FY16																					
CSD-137	Southeast Family Resource Center bio-filtration planters	Chollas Watershed	Prior to FY16																					
CSD-138	Cabrillo Heights Rain Garden	San Diego River WMA	Prior to FY16																					
CSD-139	If interim load reduction goals are not met and additional green infrastructure is required, additional publicly-owned parcels have been identified as potential opportunities for green infrastructure implementation.	Prioritized public parcels in San Dieguito and Tijuana River WMAs	Optional																					
CSD-140	10.3 acres of bioretention have been identified as potential opportunities for green infrastructure implementation on public parcels to treat a 257.5-acre drainage area.	Chollas Watershed	FY18																					
Green Streets																								
CSD-141	Mt. Abernathy Avenue	Mission Bay WMA (Tecolote Creek)	Prior to FY16																					
CSD-142	Bannock Avenue	Mission Bay WMA (Tecolote Creek)	2014																					
CSD-143	Callado Road	San Dieguito River WMA (Callado Rd and Pastoral St)	FY16																					

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																		
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CSD-144	Beta Street	Chollas Watershed	FY17																					
CSD-145	53.2 acres of green streets (26.6 acres of bioretention and 26.6 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 1,746.8-acre drainage area.	Carmel Valley Creek Subwatershed	FY19																					
CSD-146	55.92 acres of green streets (27.96 acres of bioretention and 27.96 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 2,345.5-acre drainage area.	Carroll Canyon Creek Subwatershed	FY23																					
CSD-147	121.42 acres of green streets (60.71 acres of bioretention and 60.71 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 4,128.6-acre drainage area.	Los Peñasquitos Creek Subwatershed	FY18																					
CSD-148	9.06 acres of green streets (4.53 acres of bioretention and 4.53 acres of pervious pavement) have been identified as potential opportunities for green street projects to treat a 261.92-acre drainage area.	Los Peñasquitos Lagoon Subwatershed	FY28																					
CSD-149	12.4 acres of green streets have been identified as potential opportunities for green street projects to treat a 309.4-acre drainage area.	Carmel Valley Creek Subwatershed	Optional																					
CSD-150	13 acres of green streets have been identified as potential opportunities for green street projects to treat a 323.9-acre drainage area.	Carroll Canyon Creek Subwatershed	Optional																					
CSD-151	28.1 acres of green streets have been identified as potential opportunities for green street projects to treat a 701.9-acre drainage area.	Los Peñasquitos Creek Subwatershed	Optional																					
CSD-152	2.1 acres of green streets have been identified as potential opportunities for green street projects to treat a 52.3-acre drainage area.	Los Peñasquitos Lagoon Subwatershed	Optional																					
CSD-153	32.24 acres of green streets (16.12 acres of bioretention and 16.12 acres of permeable pavement) have been identified as potential opportunities for green street projects to treat a 7260-acre drainage area.	Chollas Watershed	FY18																					
CSD-154	43.61 acres of green streets have been identified as potential opportunities for green street projects to treat a 1090.25-acre drainage area.	San Diego River WMA	FY27																					

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																			
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
CSD-155	If interim load reduction goals are not met and additional green infrastructure is required, the additional acreage of bioretention and permeable pavement may be implemented through green streets if potential opportunities for green infrastructure implementation on public parcels are not available.	San Dieguito River and Tijuana River WMAs	Optional																						
Multiuse Treatment Areas																									
Infiltration and Detention Basins																									
CSD-156	Torrey Pines Golf Course Phase 1 (Project ID 1019)	Mission Bay WMA (Scripps)	Prior to FY16																						
CSD-157	Wetland system at Sam Snead All American Golf Course.	Mission Bay WMA (Tecolote Creek)	FY27																						
CSD-158	Subsurface detention/infiltration system at Tecolote Canyon Park.	Mission Bay WMA (Tecolote Creek)	FY27																						
CSD-159	Extended Dry Detention system at James Madison High School.	Mission Bay WMA (Tecolote Creek)	FY27																						
CSD-160	Extended Dry Detention system at John Muir School/Anderson School.	Mission Bay WMA (Tecolote Creek)	FY27																						
CSD-161	Subsurface detention/infiltration system at Mt. Everest Academy Elementary School.	Mission Bay WMA (Tecolote Creek)	FY27																						
CSD-162	Ashley Falls	Los Peñasquitos Creek Subwatershed	FY19																						
CSD-163	Flintkote Sediment Detention Basin	Los Peñasquitos Lagoon Subwatershed	FY28																						
CSD-164	Upper Sorrento Valley Road Sediment Detention Basin	Carroll Canyon Creek Subwatershed	FY22																						
CSD-165	Los Peñasquitos Lagoon Sediment Basin	Los Peñasquitos Creek Subwatershed	Prior to FY16																						
CSD-166	A surface infiltration basin can be implemented in open space adjacent to Carmel Knolls Drive upon detailed site assessment.	Carmel Valley Creek Subwatershed	FY22																						
CSD-167	A subsurface detention basin in Sandburg Park upon detailed site assessment.	Los Peñasquitos Creek Subwatershed	FY26																						
CSD-168	A surface infiltration basin can be implemented in Carmel Creek Neighborhood Park and Elementary School upon detailed site assessment.	Carmel Valley Creek Subwatershed	FY22																						
CSD-169	A dry extended detention basin can be implemented in Maddox Park upon detailed site assessment.	Carroll Canyon Creek Subwatershed	FY22																						
CSD-170	A subsurface detention basin can be implemented in Dingeman Elementary School and Spring Canyon Park upon detailed site assessment.	Los Peñasquitos Creek Subwatershed	FY26																						
CSD-171	A dry extended detention basin in open space next to Canyonside Park Driveway can be implemented upon detailed site assessment.	Los Peñasquitos Creek Subwatershed	FY26																						
CSD-172	A subsurface detention gallery can be implemented in Del Mar Trails Park upon detailed site assessment.	Carmel Valley Creek Subwatershed	FY22																						

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																			
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	33	34	34
CSD-173	A subsurface detention basin in Mira Mesa High school can be implemented upon detailed site assessment.	Carroll Canyon Creek Subwatershed	FY22																						
CSD-174	A subsurface detention gallery can be implemented in Sage Canyon Park upon detailed site assessment.	Los Peñasquitos Creek Subwatershed	FY26																						
CSD-175	A dry extended detention basin can be implemented at the Park De La Cruz and Cherokee Point Elementary School site upon detailed site assessment.	Chollas Watershed	FY18																						
CSD-176	A subsurface detention basin at Joyner Elementary School can be implemented upon detailed site assessment.	Chollas Watershed	FY18																						
CSD-177	A subsurface detention basin at Euclid Elementary School can be implemented upon detailed site assessment.	Chollas Watershed	FY18																						
CSD-178	A subsurface detention basin at Ibarra Elementary School can be implemented upon detailed site assessment.	Chollas Watershed	FY18																						
CSD-179	A subsurface detention basin at Alba Middle/High School can be implemented upon detailed site assessment.	Chollas Watershed	FY18																						
CSD-180	A subsurface detention basin at Clay Park can be implemented upon detailed site assessment.	Chollas Watershed	FY18																						
CSD-181	Memorial Park: An infiltration basin has been constructed from the parking on the west side of Memorial Park to treat 1.4 acres of drainage area.	Chollas Watershed	FY14																						
CSD-182	Central Police Facility - K-9 Facility - Project ID 1011. Detention basin treats 1.1 acres of drainage area.	Chollas Watershed	Prior to FY16																						
CSD-183	Central Police Facility - Vehicle Maintenance - Project ID 1367	Chollas Watershed	Prior to FY16																						
CSD-184	Memorial Skateboard Park- Addition of detention vault to treat 0.69 acres of drainage area.	Chollas Watershed	FY15																						
CSD-185	Cesar Chavez Community Center	Tijuana River WMA	FY15																						
CSD-186	Otay Mesa Drainage Improvements - Detention Basin	Tijuana River WMA	Optional																						
CSD-187	Otay Truck Route Widening Phase 3 - La Media Rd along border fence	Tijuana River WMA	Prior to FY16																						
CSD-188	Cleator Park	San Diego River WMA	FY19																						
CSD-189	Cabrillo Heights Park	San Diego River WMA	FY19																						
CSD-190	Presidio Hills Golf Course and Park	San Diego River WMA	FY21																						
CSD-191	Montgomery Field Airport	San Diego River WMA	FY21																						
CSD-192	Ocean Beach Athletic Park and Robb Field	San Diego River WMA	FY21																						

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
						1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
						7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	3
CSD-204	If interim load reduction goals are not met and additional multiuse treatment areas are required, an infiltration basin(s) may be considered on publicly owned open spaces in canyon areas on a case-by-case basis when no other opportunities for load reductions exist.	Chollas Watershed	Optional																				
Stream, Channel and Habitat Rehabilitation Projects																							
CSD-205	El Cuervo del Norte Wetlands	Los Peñasquitos Creek Subwatershed	Prior to FY16																				
CSD-206	El Cuervo del Sur Wetlands	Los Peñasquitos Creek Subwatershed	Prior to FY16																				
CSD-207	Day lighting Cudahy Creek.	Mission Bay WMA (East side of Mission Bay Park between the Park and Claremont)	Optional																				
CSD-208	Restoration of the riparian corridor under Genesee Avenue Bridge.	Mission Bay WMA (Rose Canyon)	Optional																				
CSD-209	If interim load reduction goals are not met and additional stream, channel, and habitat rehabilitation projects are required, implement as needed.	Areas identified during feasibility studies	Optional																				
Water Quality Improvement BMPs																							
Proprietary BMPs																							
CSD-210	Torrey Pines Golf Course Phase 1 (Project ID 1019)	Mission Bay WMA (Scripps)	Prior to FY16																				
CSD-211	Mt. Ashmun Drive (Project ID 1327)	Mission Bay WMA (Tecolote Creek)	Prior to FY16																				
CSD-212	Rehco Rd.	Carroll Canyon Creek Subwatershed	Prior to FY16																				
CSD-213	North Torrey Pines Road Bridge (Project ID 1017)	Carroll Canyon Creek & Los Peñasquitos Lagoon Subwatersheds	Prior to FY16																				
CSD-214	Scripps Ranch Boulevard Median Improvements (Project ID 901)	Carroll Canyon Creek & Los Peñasquitos Lagoon Subwatersheds	Prior to FY16																				
CSD-215	Northwest Area Police Substation (Project ID 1365)	Los Peñasquitos WMA	Prior to FY16																				
CSD-216	Peñasquitos West Grading (Project ID 1051)	Carmel Valley Creek Subwatershed	Prior to FY16																				

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																		
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	33	34
CSD-217	Carmel Valley Road Enhancements (Project ID 860)	Carmel Valley Creek Subwatershed	Prior to FY16																					
CSD-218	Genesee Widening (Project ID 900)	Carroll Canyon Creek Subwatershed	Prior to FY16																					
CSD-219	Mira Sorrento Place and Vista Sorrento Parkway (Project ID 850)	Carroll Canyon Creek Subwatershed	Prior to FY16																					
CSD-220	Ocean Air Park (Project ID 906)	Los Peñasquitos Lagoon Subwatershed	Prior to FY16																					
CSD-221	Black Mountain Ranch - Northern Areas, Project ID 1386	San Dieguito River WMA (Black Mountain Ranch)	Prior to FY16																					
CSD-222	Black Mtn. Ranch Community Park (discretionary) - Project ID 1006	San Dieguito River WMA (Black Mountain Ranch Community Park)	Prior to FY16																					
CSD-223	Camino Del Sur and Maranatha Dr. - Project ID 139	San Dieguito River WMA (North side of Camino Del Sur, west of Maranatha Dr.)	Prior to FY16																					
CSD-224	Fire Station #46 Santaluz - Project ID 991	San Dieguito River WMA (Fire Station #46)	Prior to FY16																					
CSD-225	Rancho Bernardo Community Park Dog Off-Leash Area - Project ID 865	San Dieguito River WMA (Rancho Bernardo Community Park)	Prior to FY16																					
CSD-226	43rd and Logan Roadway Improvement - Project ID 1387 (filtration units treat 5.76 acres)	Chollas (Along S 43rd street between Logan Avenue and Keeler Avenue)	FY14																					
CSD-227	N Chollas Community Park Phase 1B - Project ID 855	Chollas Lake Park	Prior to FY14																					
CSD-228	Lisbon Street Roadway and Utility Improvements - Project ID 858	Chollas (Imperial Avenue and Lison Street)	Prior to FY14																					
CSD-229	Fire Station #12 - Project ID 989	Chollas (Willie James Jones Avenue and Imperial Avenue)	Prior to FY14																					
CSD-230	Rigel St Bridge Replacement - Project ID 1008	Chollas (Rigel Street and Main Street)	Prior to FY14																					
CSD-231	Otay Mesa/ Nestor Library- Development of treatment unit.	Los Peñasquitos WMA	FY15																					
CSD-232	3 Drain Inserts in Complex Street Green Mall.	San Diego River WMA	FY17																					
CSD-233	Park Ridge hydrodynamic separator	San Diego River WMA	FY17																					

ID	Strategy	Location	Implementation or Construction Year Start	FY 15 and Earlier	FY 16	FY																	
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	33
CSD-248	Through adaptive management and additional analysis in the future, the City will identify and implement one or more of the following opportunities to meet numeric goals: 1) MS4 outfall repair and relocation, 2) slope stabilization, 3) stream restoration, 4) implementation of sediment detention basins upstream of Los Peñasquitos Lagoon or 5) new strategies not yet identified.	Los Peñasquitos WMA	FY28																				