8.0 Legal Authority and Regulatory Framework

This Section presents the legal authority and regulatory framework used as a basis for assigning specific responsibilities to implement and monitor the Rainbow Creek TMDL. The laws and policies governing point source[1] and nonpoint source[2] discharges are described. Discharger accountability for attaining nutrient wasteload and load reductions is established. An approach for providing the necessary regulatory oversight of the nonpoint source nutrient load reduction is proposed. The legal authority and regulatory framework is described in terms of the following:

- Controllable Water Quality Factors
- Point Source Discharges
- Nonpoint Source Discharges
- Third Party Regulatory Based Approach

8.1 Controllable Water Quality Factors

The Rainbow Creek watershed lies within an unincorporated portion of the County of San Diego. Sources of nutrients to Rainbow Creek that result from human habitation and land use practices include wet and dry weather runoff, agricultural, orchard, and nursery irrigation return flows, septic wastewater discharges, and atmospheric deposition. Construction, maintenance, and operation of State-owned highways are also sources of nutrient discharges to Rainbow Creek. These nutrient discharges result from controllable water quality factors which are defined as those actions, conditions, or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled. This TMDL establishes wasteload and load allocations for these controllable discharges. This TMDL does not require reduction of uncontrollable discharges of nutrients such as those resulting from wildlife and natural sources.

8.2 Point Source Discharges

Dischargers responsible for actual or potential point source discharges of nutrients to Rainbow Creek are discussed in this subsection. These dischargers have specific roles and responsibilities assigned to them for achieving compliance with the total nitrogen and total phosphorus wasteload described in Section 10.0 Implementation Action Plan.

[1] The term ‘‘point source’’ is defined in Clean Water Act section 502(6) to mean any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture.

[2] The term ‘‘nonpoint source’’ refers to diffuse, widespread sources of pollution. The major sources of nonpoint source pollution in California are related to land use activities that occur throughout watersheds and include: (1) agriculture, (2) forestry (silviculture), (3) urban runoff, (e.g., from construction sites, roads and highways, septic systems), (4) marinas and boats, (5) hydromodification activities, and (6) resource extraction. As rainfall, snowmelt, irrigation water or any other type of water moves over or through the ground, it picks up and transports natural pollutants and pollutants resulting from human activity, ultimately depositing them into rivers, lakes, wetlands, coastal waters, and groundwater.

8.2.1 Regulatory Background

Clean Water Act § 402 establishes the National Pollutant Discharge Elimination System (NPDES Program) to regulate the ‘‘discharge of a pollutant,’’ other than dredged or fill materials, from a ‘‘point source’’ into ‘‘waters of the United States[3].’’ Under Clean Water Act § 402, discharges of pollutants to waters of the United States are authorized by obtaining and complying with the terms of an NPDES permit. NPDES permits commonly contain numerical discharge limits for specified pollutants and required best management practices[4] (BMPs) designed to minimize water quality impacts. These numerical effluent limitations and BMPs (or other non-numerical effluent limitations) implement both technology-based and water quality based requirements of the Clean Water Act. Technology-based limitations represent the degree of control that can be achieved by point sources using various levels of pollution control technology. If necessary to achieve compliance with applicable water quality standards, NPDES permits must contain water quality-based limitations more stringent than the applicable technology-based standards.

Within each TMDL a “wasteload allocation[5]” is determined which is the maximum amount of a pollutant that may be contributed to a waterbody by “point source” discharges of the pollutant in order to attain and maintain water quality objectives. NPDES permits must include water quality-based effluent limits or conditions that are consistent with the assumptions and requirements of the wasteload allocation. The principle regulatory means of implementing TMDLs for point source discharges regulated under NPDES permit are:

1. Allocate the total wasteload allocation calculated for point source facilities regulated under NPDES permits among each individual NPDES point source facility that is discharging the pollutant that needs to be controlled;

2. Evaluate whether the effluent limitations or conditions within the NPDES permit are consistent with the wasteload allocation. If not, incorporate effluent limitations that are consistent with the wasteload allocation into the NPDES permit[6] or otherwise revise the NPDES permit to make it consistent with the assumptions and requirements of the TMDL

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[3] See 40 CFR §122.2(c)(e). The USEPA has interpreted “waters of the United States” to include “intrastate lakes, rivers, streams (including intermittent streams) . . . the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce,” and “tributaries of [those] waters”. Rainbow Creek, a tributary of the Santa Margarita River, is a water of the United States.

[4] See 40 CFR §122.2 Best management practices (“BMPs”) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The term BMP is extensively used in the point source program in connection with NPDES permits where implementation of BMPs is enforceable.

[5] See 40 CFR 130.2(h). A wasteload allocation is the portion of the receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution.

[6] In the case of NPDES storm water permits, effluent limitations may include best management practices that evidence shows are consistent with the wasteload allocation.

wasteload allocation.[7] A time schedule to achieve compliance should also be incorporated into the NPDES permit in instances where the discharger is unable to immediately comply with the required wasteload reduction;

3. Mandate discharger compliance with the wasteload allocation in accordance with the terms and conditions of the revised NPDES permit;

4. Implement a monitoring and/or modeling plan designed to measure the effectiveness of the controls implementing the wasteload allocations and the progress the waterbody is making toward attaining water quality objectives; and

5. Establish criteria to determine that substantial progress toward attaining water quality standards is being made and if not, the criteria for determining whether the TMDL or wasteload allocation needs to be revised.

8.2.2 California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System, including the portion of the Interstate Highway System within the State's boundaries. The roads and highways operated by Caltrans are legally defined as municipal separate storm sewer systems (MS4s) and discharges of pollutants from Caltrans MS4s to waters of the United States, such as Rainbow Creek, constitute a point source discharge that is subject to regulation under an NPDES permit.

Discharges of storm water from the Caltrans owned right-of-ways, properties, facilities, and activities, including storm water management activities in construction, maintenance, and operation of State-owned highways are regulated under Order No. 99-06-DWQ, *National Pollutant Discharge Elimination System Permit, Statewide Storm Water Permit, and Waste Discharge Requirements for the State of California, Department of Transportation (Caltrans)* (Caltrans MS4 NPDES Storm Water Permit). Caltrans is responsible, under the terms and conditions of the MS4 NPDES Storm Water Permit for ensuring that their operations do not contribute to violations of water quality objectives in Rainbow Creek.

Caltrans is a point source discharger of nutrients to Rainbow Creek. Caltrans discharges storm water runoff containing nutrients from both Interstate-15 freeway surfaces and adjacent land areas via a storm drain system with outfalls discharging from both the north and south at the Rainbow Creek Bridge. Storm water runoff from highways can contain pollutants, including nutrients, from vehicle exhaust and atmospheric deposition. These discharges are contributing to

[7] See 40 CFR §122.44(d)(1)(vii)(B). NPDES water quality-based limits must be consistent with the assumptions and requirements of any available TMDL wasteload allocation. The regulations do not require the effluent limits to be identical to the wasteload allocation. The regulations leave open the possibility that the Regional Board could determine that fact-specific circumstances render something other than literal incorporation of the wasteload allocation to be consistent with the TMDL assumptions and requirements. The rationale for such a finding could include a trade amongst dischargers of portions of their load or wasteload allocations, performance of an offset program that is approved by the Regional Board, or any number of other considerations bearing on facts applicable to the circumstances of the specific discharger.

the exceedances of the nitrate and biostimulatory substances water quality objectives in Rainbow Creek.

8.2.3 CA Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CDFFP) owns and operates a wastewater treatment plant (septic tank and percolation ponds) that receives sewage wastewater flows from the Rainbow Conservation Camp. The treatment system consists of a 15,000-gallon septic tank. The septic tank effluent is transferred to one of three evaporation/percolation ponds for disposal. The ponds have earthen fill side-slopes, bottoms and containment berms. Evaporation and percolation from the ponds is the primary means of effluent disposal; however, for several days during the year, effluent from the ponds may be pumped to a spray irrigation field covering approximately 2 acres of the facility. The nutrients in the wastewater are introduced directly into the groundwater as the result of the percolation ponds discharge.

CDFFP's discharge from the treatment plant is regulated under Order No. 95-20, *Waste Discharge Requirements for the California Department of Forestry and Fire Protection, Rainbow Conservation Camp*. Order No. 95-20 requires that CDFFP prevent surfacing of wastes on their property. Order No. 95-20 also requires that surface runoff of any wastes that surfaces on property not owned or controlled by the CDFFP must be prevented. The CDFFP is required to evaluate, monitor, and take measures necessary to ensure that their current and future waste water disposal operations do not contribute to the impairment of Rainbow Creek.

The percolation ponds are suspected of not having the proper separation from groundwater and/or bedrock and the percolated effluent appears to be surfacing down gradient of the ponds and flowing into Rainbow Creek[8]. Surfacing groundwater that is recognizable as sewage from the Rainbow Conservation Camp facility constitutes a potential point source discharge of nutrients to Rainbow Creek. The Regional Board has directed CDDF, pursuant to Water Code section 13267, to conduct an investigation of the possible impacts from the Camp's wastewater discharge: to the Creek and the results of the investigation are currently under review by the Regional Board for additional follow-up action.

8.2.4 County of San Diego

The County of San Diego's discharge of urban runoff from Municipal Separate Storm Sewer Systems (MS4) is subject to Order No. 2001-01, *Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District*, NPDES No. CAS0108758. Under the terms and conditions of Order No. 2001-01 the County is responsible for controlling all storm and non-storm water flows (i.e., urban runoff) that is transported through an MS4 conveyance system to surface waters.

Nutrients are present in runoff from commercial nurseries, orchards, parks, residential areas, urban areas, and septic tank disposal system land use activities[9] in the Rainbow Creek watershed.

[8] Further details are contained in Regional Board letters to CDDF dated March 8, 2002 and June 4, 2002. Regional Board observations of these conditions during a January 28, 2003 inspection of the facility are described in a February 26, 2993 memorandum (Dorsey 2003b).

[9] Agricultural storm water discharges and return flows from irrigated agriculture in the Rainbow Creek watershed are exempt form NPDES Permit regulation under Clean Water Act §402(k)(1)(1).

Discharges from these land use activities to an MS4 operated by the County of San Diego are regulated under the NPDES Storm Water Permit. The County's NPDES Storm Water Permit prohibits discharges from municipal storm water MS4s that cause or contribute to violations of water quality objectives. To the extent that there is an MS4 discharge in the Rainbow Creek watershed from these land use activities, it is contributing to the exceedance of the nutrient water quality objective in Rainbow Creek waters.

8.3 Nonpoint Source Discharges

Nonpoint source discharges of nutrients to Rainbow Creek are discussed in this subsection. Specific roles and responsibilities assigned to nonpoint source dischargers for achieving compliance with the total nitrogen and total phosphorus load allocations are described in Section 10.0 Implementation Action Plan.

8.3.1 Regulatory Background

While point source discharges are controlled directly by the federal Clean Water Act's NPDES permit program, direct control of nonpoint source pollution is left to state programs developed under state law. Within each TMDL a " load allocation[10]" is determined which is the maximum amount of a pollutant that may be contributed to a waterbody by "nonpoint source" discharges of the pollutant in order to attain and maintain water quality objectives. Load allocations for nonpoint sources are not directly enforceable under the Clean Water Act and are only enforceable to the extent they are made so by state laws and regulations. California's Porter-Cologne Water Quality Control Act[11] applies to both point and nonpoint sources of pollution and serves as the principle legal authority in California for the application and enforcement of TMDL load allocations for nonpoint sources.

California's Nonpoint Source Pollution Control Program

In December 1999, the State Water Resources Control Board (SWRCB), in its continuing efforts to control nonpoint source (NPS) pollution in California, adopted the Plan for California's Nonpoint Source Pollution Control Program (NPS Program Plan) (SWRCB, 1999). The NPS Program Plan upgraded the State's first Nonpoint Source Management Plan adopted by the SWRCB in 1988 (1988 Plan). The primary objective of the NPS Program Plan is to reduce and prevent NPS pollution so that the waters of California support a diversity of biological, educational, recreational, and other beneficial uses. Towards this end, the NPS Program Plan focuses on implementation of 61 management measures[12] (MMs) and related management practices[13] (MPs) in six land use categories by the year 2013 [14].

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[10] See 40 CFR 130.2(g). A load allocation is the portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources.

[11] CWC §13000 et seq.

[12] MMs serve as general goals for the control and prevention of nonpoint source polluted runoff.

[13] MPs are the implementation actions taken by nonpoint source dischargers to achieve the management measure goals. USEPA and the SWRCB have dropped the word 'best' when describing the implementation actions taken by nonpoint source dischargers to control NPS pollution because "best" is considered too subjective. The "best" management practice in one area or situation might be entirely inappropriate in another area or situation. In this

The success of the NPS Program Plan depends upon individual discharger implementation of MPs. Pollutants can be effectively reduced in NPS discharges by the application of a combination of pollution prevention[15] source control, and treatment control MPs. Source control MPs (both structural and non-structural) minimize the contact between pollutants and flows (e.g., rerouting run-on around pollutant sources or keeping pollutants on-site and out of receiving waters). Treatment control (or structural) MPs remove pollutants from NPS discharges. MPs can be applied before, during, and after pollution producing activities to reduce or eliminate the introduction of pollutants into receiving waters.

California's NPS Implementation and Enforcement Policy

In May 2004, pursuant to CWC §13369 the State Water Resources Control Board (SWRCB) adopted the *Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (NPS Implementation and Enforcement Policy), setting forth how the NPS Program Plan should be implemented and enforced to control NPS pollution. The NPS Implementation and Enforcement Policy provides guidance on the statutory and regulatory authorities of the SWRCB and the Regional Water Quality Control Board's (RWQCBs) to prevent and control NPS pollution. The policy also provides guidance on the structure of NPS source control implementation programs, including third-party implementation programs, and the mandatory five key elements applicable to all NPS implementation programs.

The NPS Implementation and Enforcement Policy emphasizes the fact that the RWQCBs have primary responsibility for ensuring that appropriate NPS control implementation programs are in place throughout the State. RWQCB responsibilities include, but are not limited to regulating all current and proposed NPS discharges under Waste Discharge Requirements (WDRs), waivers of WDRs, or a basin plan prohibition, or some combination of these administrative tools.

Third-party NPS Implementation Programs

Under the NPS Implementation and Enforcement Policy, RWQCBs continue to have primary responsibility for ensuring that there are appropriate NPS control implementation programs in place to meet water quality objectives and to protect the beneficial uses of the waters of the State. An NPS pollution control implementation program is a program developed to comply with SWRCB or RWQCB Waste Discharge Requirements (WDRs), waivers of WDRs, or basin plan prohibitions. Implementation programs for NPS pollution control may be developed by a

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document the term "best management practices (BMPs)" is used exclusively in reference to schedules of activities, prohibitions of practices, maintenance procedures, and other management practices taken by NPDES permit dischargers.

[14] MMs are identified in Volume II of the *Plan for California's Nonpoint Source Pollution Control Program* (NPS Program Plan) 1999 Program Plan: *California's Management Measures for Polluted Runoff* (CAMMPR) (http://www.swrcb.ca.gov/nps/docs/cammpr-agr.doc). The State Water Resources Control Board's California Nonpoint Source Encyclopedia (2004) (http://www.swrcb.ca.gov/nps/encyclopedia.html) also contains extensive information on nutrient reduction MMs and MPs applicable to the NPS land use activities in the Rainbow Creek watershed.

[15] Pollution prevention, the initial reduction/elimination of pollutant generation at its source should be used in conjunction with source control and treatment control MPs. Pollutants that are never generated do not have to be controlled or treated.

RWQCB, the SWRCB, an individual discharger or by or for a coalition of dischargers in cooperation with a third-party representative, organization, or government agency. The latter programs are collectively known as "third-party" programs and the third-party role is restricted to entities that are not actual dischargers under RWQCB/SWRCB permitting and enforcement jurisdiction[16]. These may include NGOs, citizen groups, industry groups (including discharger groups represented by entities that are not dischargers), watershed coalitions, government agencies (e.g. cites or counties), or any mix of the above.

Under existing law, there are various ways in which the RWQCBs can use third-party programs in their NPS pollution control programs. For example, the RWQCBs can conditionally waive regulation of a particular nonpoint pollution source based on the existence of an adequate third-party program that addresses this source. Similarly, the RWQCBs can adopt individual or general WDRs for NPS discharges that build upon third-party programs. These WDRs can, for example, require that the dischargers either participate in an acceptable third party NPS program or, alternatively, submit individual pollution prevention plans that detail how they will comply with the WDRs. Likewise, the RWQCBs can adopt discharge prohibitions, which include exceptions based on third-party programs. For example, a RWQCB can except from the discharge prohibition those discharges that are adequately addressed in an acceptable third-party NPS pollution control program.

Given the extent and diversity of NPS pollution discharges, the Regional Board needs to be as creative and efficient as possible in devising approaches to prevent or control NPS pollution. Third-party programs can enhance the Regional Board's ability to reach multiple numbers of NPS dischargers who individually may be unknown to the Regional Board. Under this approach, oversight of discharger NPS pollution control efforts can be achieved more efficiently and with less impact on the Regional Board's limited NPS program staffing and financial resources.

Key Elements of an NPS Implementation Programs

Under the NPS Implementation and Enforcement Policy the Regional Board is required to ensure that NPS implementation programs developed by dischargers or third-parties meet the requirements of the five key structural elements described below:

Key Element 1: The objectives of an NPS control implementation program shall be explicitly stated and must, at a minimum, address NPS pollution in a manner designed to achieve State and regional water quality standards, including whatever higher level of water quality the RWQCB determines is appropriate in accordance with antidegradation principles.

Key Element 2: The NPS control implementation program shall include a discussion of the MPs that are expected to be implemented to ensure attainment of program objectives, and a discussion of the process to be used to verify proper MP implementation.

Key Element 3: Where a RWQCB determines it is necessary to allow time to achieve water quality standards, the NPS control implementation program shall include a specific time

[16] This TMDL identifies the County of San Diego as a potential third party for the purposes of such an agreement. Although the County discharges municipal stormwater to Rainbow Creek, its role in implementing a third party approach would not apply to those discharges.

schedule and corresponding quantifiable milestones designed to measure progress toward reaching the program's objectives.

Key Element 4: The NPS control implementation program shall include sufficient feedback mechanisms so that the RWQCB, dischargers, and the public can determine if the program is achieving its stated objectives or if further MPs or other measures are needed.

Key Element 5: The Regional Board shall make clear, in advance, the potential consequences for failure to achieve an NPS control implementation program's stated purposes.

8.3.2 Rainbow Creek Nonpoint Source Discharges

The major nonpoint source (NPS) nutrient discharges in the Rainbow Creek watershed result from (1) commercial nurseries, (2) agricultural fields, (3) orchards, (4) parks, (5) residential areas, (6) urban areas, and (7) septic tank disposal system land use activities, as described below. Some of these discharges are regulated under the terms and conditions of the Regional Board's Basin Plan waiver policy[17]. Individual landowners and other persons (e.g. homeowners, nurseries, businesses) engaged in these land use activities are required to be held accountable for attaining nutrient load reductions in Rainbow Creek.

Commercial Nurseries

Greenhouses and container crop industries apply nutrients in the form of chemical fertilizers (e.g., liquid or time release) to optimize production. When fertilizer applications exceed plant needs, the excess can wash into Rainbow Creek during rain events or through irrigation runoff. Excessive irrigation can affect water quality by causing erosion, and transporting nutrients, pesticides, and heavy metals to nearby waterways and groundwater. Commercial nursery impacts on surface water and groundwater can be minimized by properly managing nutrient applications and irrigation practices, and by controlling sediment erosion and runoff.

Nursery Irrigation Return Water Waiver

Discharges of irrigation return water from nurseries[18] in the San Diego Region currently are regulated under the terms and conditions of the Regional Board's Basin Plan waiver policy.[19] Under the terms of this policy the Regional Board waives the obligation of nursery owners and operators to obtain waste discharge requirements for discharges of irrigation return water from nurseries subject to the following conditions:

[17] The Regional Board may waive issuance of waste discharge requirements for a specific discharge or types of discharge pursuant to CWC §13269 if such waiver is determined to be in the public interest. The waiver of waste discharge requirements is conditional and may be terminated at any time by the Regional Board for any specific discharge or any specific type of discharge.

[18] For the purposes of the waiver, a "nursery" is defined as a facility engaged in growing plants (shrubs, trees, vines, etc.) for sale.

[19] The Regional Board may waive issuance of waste discharge requirements for a specific discharge or types of discharge pursuant to California Water Code §13269 if such waiver is determined to be in the public interest. The waiver of waste discharge requirements is conditional and may be terminated at any time by the Regional Board for any specific discharge or any specific type of discharge.

- There is no discharge to waters of the United States;

- Management practices are implemented for the discharge as described in the NPS Program Plan (SWRCB, 1999);

- The discharge shall not create a nuisance as defined in the California Water Code;

- The discharge shall not cause a violation of any applicable water quality standard; and

- The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

Agricultural Fields

Agricultural activities that cause nonpoint source pollution include plowing, fertilizing, irrigation, pesticide spraying, planting, and harvesting. The major agricultural nonpoint source pollutants that result from these activities are nutrients, sediment, pathogens, pesticides, and salts. Agricultural producers apply nutrients in the form of chemical fertilizers, manure, or sludge to optimize production. Excess fertilizers and irrigation runoff, as well as rainfall runoff, can wash nutrients and sediments off of properties into nearby waterways. Agricultural impacts on surface water and groundwater can be minimized by properly managing nutrient applications and irrigation practices, and by controlling sediment erosion and runoff.

Agricultural Irrigation Return Water Discharge Waiver

Discharges of irrigation return water from agriculture [20] fields in the San Diego Region are regulated under terms and conditions of the Regional Board's Basin Plan waiver policy. Under the terms of this policy the Regional Board waives the obligation of agricultural field owners and operators to obtain waste discharge requirements for agricultural irrigation return water discharges to waters of the state subject to the following conditions:

- Management practices are implemented for the discharge as described in the NPS Program Plan (SWRCB, 1999);

- The discharge shall not create a nuisance as defined in the California Water Code;

- The discharge shall not cause a violation of any applicable water quality standard; and

- The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

Orchards

Agricultural activities that cause nonpoint source pollution include fertilizing, irrigation, pesticide spraying, planting, and harvesting. The major agricultural nonpoint source pollutants that result from these activities are nutrients, sediment, pathogens, pesticides, and salts. Agricultural producers apply nutrients in the form of chemical fertilizers and irrigate to optimize production. Excess fertilizers and irrigation runoff, as well as rainfall runoff, can wash or leach

[20] For the purposes of the waiver , "agriculture" is defined as the production of fiber and/or food (including food for animal consumption, e.g., alfalfa).

nutrients and sediments off of properties into nearby waterways and groundwater. Agricultural impacts on surface water and groundwater can be minimized by properly managing nutrient applications and irrigation practices, and by controlling sediment erosion and runoff.

Agricultural Orchard Irrigation Return Water Discharge Waiver

Discharges of irrigation return water from orchards in the San Diego Region are regulated under terms and conditions of the Regional Board's Basin Plan waiver policy for agricultural irrigation return water. (See above discussion on *Agricultural Irrigation Return Water Discharge Waiver*.)

Park

The San Diego County Parks and Recreation Department perform landscape maintenance of the community park (Rainbow Park). The park includes a children's playground, restroom facilities, a parking lot and a large grassy area with some landscaped areas. Sources of nutrients are organic matter such as fertilizer usage, leaves, lawn clippings, pet wastes, street dirt, and automobile exhaust. The restroom facilities utilize an on-site holding tank that is regularly pumped for disposal at a wastewater treatment facility outside of the watershed rather than a septic tank disposal system.

Residential Areas

In residential areas, sources of nutrients are organic matter such as leaves, lawn clippings, pet and domestic livestock wastes, and faulty septic tank disposal systems (see discussion below), as well as, fertilizer usage, street dirt, and automobile exhaust.

Urban Areas

In the Rainbow Creek watershed, the urban land use category includes commercial and public establishments (e.g., market, restaurant, gas station, school, and fire station). Sources of nutrients from these areas can be organic matter (lawn clippings and leaves) as well as street dirt, automobile exhaust, and excessive use of fertilizers.

Septic Tank Disposal Systems

All properties in the Rainbow Creek Watershed utilize septic tank disposal systems for sewage disposal. By design, septic tank disposal systems use bacteria to digest organic matter and chemically break down ammonia and organic nitrogen into nitrate, and organic phosphorus into orthophosphate (Huntley 1987). Septic tank disposal systems can contaminate groundwater with nitrate. Since orthophosphate tends to bind to soils, its mobility is considered to be minimal (Huntley 1987). These systems can potentially impact Rainbow Creek when contaminated groundwater surfaces in the Creek (i.e., Rainbow Creek is a gaining stream).

Additionally, landowners in Rainbow Valley have been prohibited by the County of San Diego from installing or replacing septic tank disposal systems since 1970 because of a high groundwater table (Whitman 1970). Septic tank disposal systems in the Rainbow Creek watershed do not have the required separation to provide adequate treatment to wastewater. The high groundwater condition can cause septic tank disposal systems to malfunction and release bacteria, pathogens, and nutrients into the environment, contaminating groundwater and nearby streams.

Conventional Septic Tank Discharges / Subsurface Disposal Systems for Residential Units Waivers

Discharges of wastewater from conventional septic tank/subsurface disposal systems for residential units in the San Diego Region are regulated under the terms and conditions of the Regional Board's Basin Plan waiver policy. Under the terms[21] of this policy the Regional Board waives the obligation of residential septic tank owners and operators to obtain waste discharge requirements for discharges to groundwater subject to the following conditions:

- The design of the system is approved by the county health agency having jurisdiction where the system is located to the conditions set forth in the *Basin Plan, Chapter 4, (Implementation)* section entitled *Guidelines for New Community and Individual Sewerage Facilities*, and where systems are not constructed within areas designated as Zone A as defined by the California Department of Health Services' *Drinking Water Source Assessment and Protection Program*.

- The discharge shall not create a nuisance as defined in the California Water Code;

- The discharge shall not cause a violation of any applicable water quality standard; and

- The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

Proposed Regulations for Onsite Wastewater Treatment Systems

California Water Code §13291 requires the State Water Resources Control Board to develop and adopt regulations for the permitting and operation of onsite sewage treatment systems[22] (OWTS) in the State and further directs the Regional Board to incorporate the regulations into the Basin Plan. These regulations are currently under development and will include mandated nitrogen reduction performance requirements for OWTS, including septic tanks that are identified as contributing to the impairment of surface water bodies listed as impaired pursuant to Section 303(d) of the Clean Water Act. As currently drafted, the new regulations would also require the Regional Board to issue waste discharge requirements for all OWTS beginning in January 1, 2009, unless the County of San Diego assumes responsibility for enforcement of the regulations through a Memorandum of Understanding (MOU) with the Regional Board. The implementation of these new regulations on septic tank disposal systems in the Rainbow Creek watershed will be an important vehicle for attaining the required nutrient load reductions for septic tank disposal systems.

[21] This waiver is applicable until six months after the State Water Resources Control Board adopts statewide criteria for on-site disposal systems pursuant to the CWC §13291 regulations for onsite sewage treatment systems.

[22] "Onsite wastewater treatment system(s)" (OWTS) is any individual or community onsite wastewater treatment, pretreatment and dispersal system including, but not limited to, a conventional, alternative, or experimental sewage dispersal system such a septic tanks having a subsurface discharge.

8.4 Third-Party Regulatory Based Approach

The Regional Board supports a Third-Party regulatory-based approach[23] to implement the nutrient load reductions assigned to nonpoint sources in the Rainbow Creek watershed. The purpose of this section is to provide the rationale for that recommendation and to present some additional features of this approach that would be beneficial to implementing this TMDL.

As previously discussed, the State Water Board has adopted a *Plan for California's Nonpoint Source Pollution Control Program* (NPS Program Plan) (1999) and a *Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (2004). These documents describe alternative strategies that can be employed to control NPS pollution. In general, the approach that is used depends on four key factors:

- Discharger compliance in implementing MPs and other strategies that effectively prevent or control NPS discharges;
- The progress being made toward reducing NPS polluted runoff;
- The complexity and persistence of the water quality problem; and
- The need for increased regulatory oversight to attain water quality objectives.

8.4.1 Persistence and Complexity of Water Quality Problem

Excessive nutrient concentrations in Rainbow Creek have persisted since the 1980s, when agricultural practices used in Rainbow Valley resulted in significant increases of nitrate concentrations in Rainbow Creek. Although voluntary implementation of MP in the watershed resulted in significant reductions of nutrient concentrations in Rainbow creek since 1996, nutrient concentrations in the creek still exceed the applicable nutrient water quality objectives[24].

Controlling and reducing nutrient discharges in the Rainbow Creek watershed to meet the TMDL nutrient load reductions for nonpoint sources will be a long term and complicated undertaking. There are multiple sources of nutrients in the watershed in seven different land use categories with an array of agencies and dischargers whose actions need to be coordinated. MMs and MPs need to be identified and implementation tracked and monitored. Water quality levels in Rainbow Creek need to be monitored and accessed to determine the effectiveness of the nutrient load reduction efforts, water quality trends, and success in attaining water quality objectives. A responsible regulatory agency is needed to lead and coordinate the effort.

8.4.2 Management Agency Agreement (MAA) with Local Land Use Agency

In light of the persistence of the nutrient water quality impairment conditions and the need for increased regulatory oversight, the Regional Board proposes to use a Third Party regulatory

[23] The term "third party regulatory based approach" refers to an approach where a local governmental agency can oversee and enforce a NPS implementation program in the Rainbow Creek watershed.

[24] The term nutrient water quality objectives as used in this document refers to both the inorganic nitrate and biostimulatory nutrient water quality objectives described in Chapter 3 of the Water Quality Control Plan for the San Diego Basin (9) (Basin Plan) September 8, 1994.

based approach to achieve compliance with the nonpoint source (NPS) nutrient load reductions of this TMDL. The Regional Board intends to accomplish this by negotiating a Management Agency Agreement (MAA)[26] with the County of San Diego setting forth the commitments of both parties to undertake various implementation responsibilities for the NPS nutrient load reductions of this TMDL.

Under the terms of the MAA, the County of San Diego will be requested to take the lead in establishing MMs and overseeing MPs implementation by NPS dischargers to attain TMDL nutrient load reductions in the Rainbow Creek watershed. The County of San Diego's actions to implement the MAA will be taken under the County's own legal authority and using the County's own regulatory processes. The fundamental purpose in applying the MAA approach is to employ the assistance of the County of San Diego in achieving at least the same degree of control over NPS pollution in the Rainbow Creek watershed as could be attained through direct regulation under Regional Board authority. While a cooperative partnership between the Regional Board and the County of San Diego is possible without a formal agreement, an MAA will enhance the effectiveness of the partnership by documenting commitments and clarifying roles and responsibilities of each party over the next 20 years until compliance with the nutrient water quality objectives is attained.

The Regional Board cannot delegate its NPS authorities and responsibilities to the County of San Diego. The Regional Board will not defer taking action as it determines necessary to ensure implementation of activities required under the TMDL, or if the nutrient water quality problem persists. Any Regional Board enforcement action taken will be against individual dischargers and not the County of San Diego, except as those actions relate to the County's regulatory obligations as a municipal stormwater discharger. The Regional Board will also provide assistance to the County of San Diego as requested to enforce implementation of MPs and the nutrient load reductions specified in this TMDL.

8.4.3 County of San Diego Legal Authority

The success of the MAA approach is contingent on the County of San Diego's willingness to undertake the role of a lead NPS management agency for the Rainbow Creek watershed and its ability to act effectively in that role. The County of San Diego's capability of acting effectively as a lead NPS control agency stems from its role as the principal land use planning authority governing land use practices in the Rainbow Creek watershed.

The legal framework within which the County exercises local planning and land use functions plays a critical pivotal role in controlling NPS nutrient pollution in the Rainbow Creek watershed. The County of San Diego performs land use planning in order to identify important community issues (such as new growth, housing needs, and environmental protection), project

25

[26] Management Agency Agreement (MAA) refers to an agreement between the Regional Board and federal or state agencies or local land use agencies having either 1) enforcement authority over nonpoint sources or 2) management responsibility for publicly owned or controlled land and the ability to control NPS discharges from activities on that land. The actions taken by these agencies under the MAA are taken under their own authorities and using their own regulatory processes.

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future demand for services (such as sewer, water, roads, etc.), anticipate potential problems (such as overloaded sewer facilities or crowded roads), and establish goals and policies for directing and managing growth. The County uses a variety of tools in the planning process including the general plan, specific plans, zoning, and the subdivision ordinance. Following is a review of the County of San Diego's local planning and land use functions which could be used to support implementation of NPS load reductions in this TMDL.

State Law And Local Planning

State law is the foundation for local planning in California. The California Government Code (Sections 65000 et seq.) contains many of the laws pertaining to the regulation of land uses by local governments including: the general plan requirement, specific plans, subdivisions, and zoning. This framework is provided in California Planning Law (Government Code §§ 65000 et seq.), the California Zoning Law (Government Code §§ 68000 et seq.), the Subdivision Map Act (Government Code §§ 66410 et seq.), and the California Environmental Quality Act (Public Resources Code §§ 21000 et seq.).

The County of San Diego General Plan

Under California's Planning Law (Government Code §§65000 et seq.), the County of San Diego must adopt a comprehensive, long-term general plan for the physical development of the county and any land outside its jurisdiction that bears relation to its planning. This general plan is the official County policy regarding the location of housing, business, industry, roads, parks, and other land uses, protection of the public from noise and other environmental hazards, and for the conservation of natural resources.

The general plan is the County's basic planning document and serves as the blue print for future development throughout the County including the Rainbow Creek watershed. It represents the County's view of its future; a constitution made up of the goals and policies upon which the County Board of Supervisors bases their land use decisions. The general plan and its diagrams have a long-term outlook, identifying the types of development that will be allowed, the spatial relationships among land uses, and the general pattern of future development. Following adoption of a general plan, the County may also prepare specific plans and community plans that have a finer level of detail than that provided by the general plan for particular geographic areas.

State law establishes a set of basic issues for consideration in local general plans and the County of San Diego determines the relative importance of each issue to local planning and decides how they are to be addressed in its general plan. Pursuant to Government Code § 65302, general plans must contain seven elements: (1) land use, (2) circulation, (3) housing, (4) conservation, (5) open space, (6) noise, and (7) safety[27]. The County of San Diego is free to adopt a wide variety of additional elements as necessary covering subjects of particular interest to local jurisdictions.

[27] Land use, conservation, open space and circulation are the elements most relevant to NPS pollution prevention and control: The conservation element addresses the identification, conservation, development and use of natural resources including water, forests, soils, waterways, wildlife and mineral deposits.

All subdivisions, public works projects, and zoning decisions must be consistent with the general plan. The County's corporate and police powers, and zoning and subdivision ordinances (see below) are the primary tools used to implement the general plan.

Zoning

Government Code §§65800 et seq. provides that San Diego County can adopt and administer zoning laws, ordinances (including pollution control ordinances), and rules and regulations to implement the general plan. A zoning ordinance is the local law that spells out the immediate, allowable uses for each piece of property within the community. The purpose of zoning is to implement the policies of the general plan. Each property in the community is assigned a "zone" listing the kinds of uses that will be allowed on that land (e.g., single family residential, multi-family residential, neighborhood commercial, agricultural, etc.) and setting development standards (e.g., minimum lot size, maximum building height, minimum front-yard depth). The distribution of agricultural, residential, commercial and other zones is based on the pattern of land uses established in the community's general plan.

Zoning is adopted by ordinance and is basically a "permit" type of land use control. Land may be put only to those uses listed in the zone assigned to it. The permit is issued for a specific project, such as building construction, grading projects for roads and bridges, new septic tank disposal system installations as well as repairs. These permits can be conditioned based on conformance with the zoning ordinance or other applicable authorities.

Subdivision Map Act

In general, land cannot be divided in California without local government approval. Dividing land for sale, lease, or financing is regulated by local ordinances based on the State Subdivision Map Act (commencing with Government Code § 66410). This Act vests in the County of San Diego the power to regulate and control the design of subdivisions within its jurisdiction.

There are basically two types of subdivisions: (1) parcel maps, which are limited to divisions resulting in fewer than five lots (with certain exceptions), and (2) final map subdivisions (also called tract maps), which apply to divisions resulting in five or more lots.

Applications for both types of subdivisions must be submitted to the County of San Diego for consideration in accordance with the its subdivision ordinance and the Subdivision Map Act. Subdivision regulation, like zoning, is another enforcement tool that the County uses for implementing its general plan. The County can deny a subdivision if it finds that the design of the subdivision or the proposed improvements will likely cause substantial environmental damage or substantially injure fish, wildlife, or their habitats.

Other Ordinances and Regulations

The County of San Diego adopts other ordinances besides zoning and subdivision to protect the general health, safety, and welfare of their inhabitants. Common types include flood protection, historic preservation, design review, hillside development control, growth management, impact fees, traffic management, and sign control.

Local ordinances may also be adopted in response to state requirements. Examples include local coastal programs (California Coastal Act), surface mining regulations (Surface Mining and

Reclamation Act), earthquake hazard standards (Alquist-Priolo Special Studies Zone Act), and hazardous material disclosure requirements. These regulations are generally based on applicable state law.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) (Public Resources Code §§21000 et seq.) requires local and state governments to consider the potential environmental effects of a project before deciding whether to approve it or not. CEQA's purpose is to disclose the potential impacts of a project, suggest methods to minimize those impacts, and discuss alternatives to the project so that decision makers will have full information upon which to base their decision. CEQA is a complex law with a great deal of subtlety and local variation.

The County of San Diego serves as the lead agency[28] in practically all local planning matters (such as rezoning, conditional use permits, and specific plans) for lands within its jurisdiction. CEQA also provides that the County of San Diego, in its role as lead agency, prepare an Environmental Impact Report (EIR)[29] before it approves a public or private project[30] having a significant effect[31] on the environment if the County has the discretion to approve or disapprove the project. The EIR must describe feasible mitigation measures to minimize the project's significant environmental impacts. The County can impose conditions to mitigate significant environmental impacts. The County can also impose a reporting or monitoring program to ensure that mitigation measures are implemented.

8.4.4 Memorandum of Understanding (MOU) with Assistance Agencies

Another proposed action of the Third Party regulatory based approach is for the Regional Board to seek less formal agreements with federal, state, and local agencies, and special districts that can provide technical or financial assistance to support implementation of MPs. These agreements are referred to as memoranda of understanding (MOUs).[32] Agencies and organizations such as Natural Resources Conservation Service, Mission Resource Conservation

[28] CEQA provides for the assignment of a "lead agency" responsible for seeing that environmental review of projects is done in accordance with CEQA and that environmental analyses are prepared when necessary. The agency with the principal responsibility for issuing permits to a project (or for carrying out the project) is deemed to be the "lead agency". As lead agency, it may prepare the environmental analysis itself or it may contract for the work to be done under its direction.

[29] An EIR discusses the proposed project, its environmental setting, its probable impacts, realistic means of reducing or eliminating those impacts, its cumulative effects, and alternatives to the project.

[30] See Public Resources Code § 21065. The term "project" is defined as any activity undertaken, supported or authorized by a public agency which may cause a direct physical change, or reasonably foreseeable indirect physical change in the environment, including activities involving the issuance of permits and entitlements.

[31] See Public Resources Code § 21068. A " significant effect" is an effect that has a substantial or potentially substantial adverse effect on the environment.

[32] There are two general types of MOUs: (1) cooperative agreements made with other agencies or organizations that are able to provide information or technical or financial assistance to further the State's goal of preventing or controlling NPSs of pollution; and (2) cooperative agreements made with land management agencies with authority to control NPS discharges through inclusion of MPs in their land lease agreements.

District (MCRD), and the University Of California Cooperative Extension can provide valuable assistance in defining appropriate management measures (MMs) and helping NPS dischargers implement MPs. Formalizing these arrangements in a MOU with the Regional Board would assist the various agencies and districts in targeting technical and financial resources for Rainbow Creek nutrient NPS problems.