Appendix 1

Environmental Analysis and Checklist

for

Amendment to the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Implementation Provisions for Indicator Bacteria Water Quality Objectives to Account for Loading from Natural Uncontrollable Sources Within the Context of a Total Maximum Daily Load

California Regional Water Quality Control Board
San Diego Region

May 14, 2008

1 California Environmental Quality Act Requirements

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) must comply with the California Environmental Quality Act (CEQA) when amending the Water Quality Control Plan for the San Diego Basin (9) (Basin Plan) as proposed in this project to add new water quality objective implementation provisions for contact water recreation (REC-1) and non-contact water recreation (REC-2). Under the CEQA, the San Diego Water Board is the Lead Agency for evaluating the environmental impacts of the reasonably foreseeable methods of compliance with the proposed amendment.

The adoption of a Basin Plan amendment is an activity subject to CEQA requirements because Basin Plan amendments constitute rules or regulations requiring the installation of pollution control equipment, establishing a performance standard, or establishing a treatment requirement.[1] Sections 1.1 and 1.2 below describe in detail the statutory requirements and scope of this environmental analysis required by the CEQA for Basin Plan amendments.

1.1 Exemption from Requirement to Prepare Standard CEQA Documents

The CEQA authorizes the Secretary of the Resources Agency to certify state regulatory programs, designed to meet the goals of the CEQA, as exempt from its requirements to prepare an Environmental Impact Report, Negative Declaration, or Initial Study. The State Water Resources Control Board's (State Water Board) and the San Diego Water Board's Basin Plan amendment process is a certified regulatory program and is therefore exempt from the CEQA's requirements to prepare such documents.[2]

The State Water Board's CEQA implementation regulations[3] describe the environmental documents required for Basin Plan amendment actions. These documents consist of a written report that includes a description of the proposed activity, alternatives to the proposed activity to lessen or eliminate potentially significant environmental impacts, and identification of mitigation measures to minimize any significant adverse impacts. For this project, these documents are the Technical Report entitled *Amendment to the Water Quality Control Plan for the San Diego Basin – Addition of Implementation Provisions for Indicator Bacteria Water Quality Objectives to Account for Loading from Natural Uncontrollable Sources Within the Context of a Total Maximum Daily Load* (Technical Report), the Basin Plan amendment (Attachment A to Appendix 2), and an environmental checklist and analysis (sections 4 and 5 below). These components fulfill the requirements of the CEQA for preparation of environmental documents for this Basin Plan amendment.[4]

[1] 14 CCR section 15187 (a).
[2] 14 CCR section 15251(g) and Public Resources Code section 21080.5.
[3] 23 CCR section 3720 et seq. "Implementation of the Environmental Quality Act of 1970."
[4] 23 CCR section 3777

1.2 Scope of Environmental Analysis

The CEQA has specific provisions that establish the scope of the environmental analysis required for the adoption of this Basin Plan amendment. The CEQA limits the scope to an environmental analysis of the reasonably foreseeable methods of compliance with the amendment. The State Water Board CEQA Implementation Regulations for Certified Regulatory Programs[5] require the environmental analysis to include at least the following:

1. A brief description of the proposed activity. In this case, the proposed activity is the proposed Basin Plan amendment. This amendment is described in section 2 of this appendix.

2. Reasonable alternatives to the proposed activity (discussed in section 8).

3. Mitigation measures to minimize any significant adverse environmental impacts of the proposed activity (discussed in section 5).

Additionally, the CEQA[6] and CEQA Guidelines[7] require the following components, some of which are repetitive of the list above:

1. An analysis of the reasonably foreseeable environmental impacts of the methods of compliance. These methods may be employed to comply with the Basin Plan amendment. Reasonably foreseeable methods of compliance are described in section 3. Sections 4 and 5 identify the environmental impacts associated with the methods of compliance.

2. An analysis of the reasonably foreseeable feasible mitigation measures relating to those impacts. This discussion is also in section 5.

3. An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation, which would avoid or eliminate the identified impacts. This discussion is in section 5.1.

Additionally, the CEQA Guidelines require the environmental analysis take into account a reasonable range of:[8]

1. Environmental factors (section 5);
2. Economic factors (section 7);
3. Technical factors (section 6);
4. Population (section 6);
5. Geographic areas (section 6); and
6. Specific sites (section 6).

[5] Ibid.
[6] Public Resources Code section 21159 (a)
[7] 14 CCR section 15187(c)
[8] 14 CCR section 15187(d),Public Resources Code section 21159 (c)

A "reasonable range" does not require an examination of every site, but a reasonably representative sample of them. The statute specifically states that the agency shall not conduct a "project level analysis."[9] Rather, a project level analysis must be performed by the dischargers that are required to implement programs in accordance with the Basin Plan amendment.[10] Notably, the San Diego Water Board is prohibited from specifying the manner of compliance with its regulations,[11] and accordingly, the actual environmental impacts will necessarily depend upon the compliance strategy selected by the dischargers. In preparing this environmental analysis, the San Diego Water Board has considered the pertinent requirements of state law,[12] and intends this analysis to serve as a tier 1 environmental review.

Any potential environmental impacts associated with the Basin Plan amendment depend upon the specific compliance projects selected by the dischargers, most of whom are public agencies subject to their own CEQA obligations. If not properly implemented or mitigated at the project level, there could be adverse environmental impacts from implementing projects in accordance with the Basin Plan amendment. The substitute CEQA documents identify broad mitigation approaches that could be considered at the project level. Consistent with the CEQA, the substitute documents do not engage in speculation or conjecture, but rather consider the reasonably foreseeable environmental impacts of the reasonably foreseeable methods of compliance, the reasonably foreseeable mitigation measures, and the reasonably foreseeable alternative means of compliance, which would avoid, eliminate, or reduce the identified impacts.

2 Description of the Proposed Activity

The Basin Plan designates beneficial uses of water bodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The proposed Basin Plan amendment would incorporate into the Basin Plan additional implementation provisions for the Region's indicator bacteria water quality objectives that protect the REC-1 beneficial use.

When a water body is not meeting its water quality objectives and is impaired for a particular pollutant, a total maximum daily load (TMDL) for the water body and impairing pollutant must be developed. A TMDL is the pollutant loading capacity a water body can assimilate while still attaining its water quality objectives. TMDLs prescribe wasteload and load allocations to the point sources and nonpoint sources discharging pollutants causing water body impairments. The San Diego Water Board has recently adopted TMDLs for bacteria-impaired

[9] Public Resources Code section 21159(d)
[10] Public Resources Code section 21159.2
[11] Water Code section 13360
[12] Public Resources Code section 21159 and 14 CCR section 15187

beaches and creeks within the Region. It is also planning to adopt TMDLs for other bacteria-impaired water bodies.

For the purposes of developing or modifying indicator bacteria TMDL WLAs/LAs, the proposed Basin Plan amendment would interpret the indicator bacteria water quality objectives that protect the REC-1 and REC-2 beneficial uses using a "reference system and antidegradation approach" (RSAA) or a "natural sources exclusion approach" (NSEA). Both of these approaches recognize that there are natural sources of indicator bacteria that may cause or contribute to exceedances of water quality objectives on their own, without contribution from anthropogenic sources.

Implementation of indicator bacteria water quality objectives using the RSAA requires control of indicator bacteria from anthropogenic sources so that the bacteriological water quality that is achieved is consistent with that of a reference system. A reference system is a water body that is minimally impacted by anthropogenic activities that can affect indicator bacterial densities in the water body. In contrast, implementation of indicator bacteria water quality objectives using the NSEA also requires control of indicator bacteria from anthropogenic sources, but rather than requiring achievement of reference system bacteria levels, the NSEA requires evidence that remaining indicator bacteria densities do not indicate an elevated health risk beyond that allowable by applicable bacteriological standards.

These approaches are consistent with state and federal antidegradation policies (State Water Board Resolution No. 68-16 and 40 CFR 131.12), while acknowledging that the San Diego Water Board's intent is not to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of indicator bacteria. While treatment or diversion of natural sources may fully address the impairment of the beneficial use, such an approach may adversely affect valuable aquatic life and wildlife beneficial uses in the Region.

2.1 Surrounding Land Uses and Setting

The San Diego Region forms the southwest corner of California and occupies approximately 3,900 square miles. The western boundary of the Region consists of the Pacific Ocean coastline. The northern boundary of the Region is formed by the hydrologic divide starting near Laguna Beach and extending inland through El Toro and easterly along the ridge of the Elsinore Mountains into the Cleveland National Forest. The eastern boundary of the Region is formed by the Laguna Mountains and other lesser known mountains located in the Cleveland National Forest. The southern boundary of the Region is formed by the United States-Mexico international border.

The San Diego Region encompasses most of San Diego County, parts of southwestern Riverside County, and southwestern Orange County. The Region is divided into a coastal plain area, a central mountain-valley area, and an

eastern mountain-valley area. It consists of eleven hydrologic units that ultimately drain to the Pacific Ocean. The climate in the Region is generally mild with annual temperatures averaging around 65°F near the coastal areas. Average annual rainfall ranges from 9 to 11 inches along the coast to more than 30 inches in the eastern mountains. There are two distinct seasons in the Region. Summer dry weather occurs from late April to mid-October. During this period almost no rain falls. The winter season (mid-October through early April) consists of generally dry weather interspersed by occasional rain storms. Eighty-five to ninety percent of the annual rainfall occurs during the winter season.

The land use of the Region is highly variable. The coastline areas are highly concentrated with urban and residential land uses, and the inland areas primarily consist of open space. Most of the Region is occupied by open space or recreational land use, followed by low-density residential and agriculture/livestock land uses. Other major land uses are commercial/institutional, high-density residential, industrial/transportation, military, transitional, and water.

3 Analysis of Reasonably Foreseeable Methods of Compliance

The Basin Plan amendment will essentially be complied with through discharger implementation of municipal storm water and nonpoint source programs designed to attain the WLAs/LAs specified by various indicator bacteria TMDLs. Potential environmental impacts associated with the Basin Plan amendment are analyzed by assessing the impacts that will result from dischargers complying with indicator bacteria TMDL WLAs/LAs using the RSAA or NSEA provided in the Basin Plan amendment, as opposed to dischargers complying with indicator bacteria TMDL WLAs/LAs without using the RSAA or NSEA.

These two approaches for complying with indicator bacteria TMDL WLAs/LAs are expected to have the same reasonably foreseeable methods of compliance. The most reasonably foreseeable methods of compliance are for dischargers to implement best management practices for point source discharges, and management practices for nonpoint sources.[13] Typical BMPs that may be chosen by dischargers to comply with indicator bacteria TMDL WLAs/LAs are often divided into non-structural and structural controls, and are described below.

Non-structural Controls

Non-structural controls typically are aimed at controlling sources of a pollutant and generally do not involve new construction. No potentially significant impacts on the environment were identified for these controls.

Education and Outreach: Conduct education and outreach to residents to minimize the potential for contamination of stormwater runoff by cleaning up after their pets, picking up litter, minimizing runoff from agriculture, livestock, and

[13] For simplicity, the abbreviation BMP is used in this document to represent both best management practices and management practices.

horse ranch facilities, and controlling excessive irrigation. Bacterial source-tracking studies in a watershed in the Seattle, Washington area found that nearly 20 percent of the bacteria isolates that could be matched with host animals were matched with dogs.[14]

Road and Street Maintenance: Increase frequency of street sweeping to maintain clean sidewalks, streets, and gutters. Street sweeping can reduce nonpoint source pollution by 5 to 30 percent when a conventional mechanical broom and vacuum-assisted wet sweeper is used.[15] The U.S. Environmental Protection Agency (USEPA) reports that the new vacuum assisted dry sweepers can achieve 50 to 88 percent overall reductions in the annual sediment loading for a residential street, depending on sweeping frequency. A reduction in sediment load may lead to a reduction in indicator bacteria being carried to the MS4, and ultimately to beaches and creeks.

Storm Drain System Cleaning: Storm drain systems should be cleaned regularly since flows in the drains are rarely high enough to flush the drains. Cleaning of the storm drain systems will reduce the levels of indicator bacteria as well as reduction of other pollutants, trash, and debris both in the storm drain system and in receiving waters.

BMP Inspection and Maintenance: Conduct regular inspections of treatment control BMPs to ensure their adequacy of design and proper function. Routine inspection and maintenance is an efficient way to prevent potential nuisance situations, such as odors, mosquitoes, weeds, etc., and can reduce the need for repair maintenance and the chance of polluting storm water runoff by finding and correcting problems before the next rain.[16]

Enforcement of Local Ordinances: Develop and/or enforce municipal ordinances prohibiting the discard of litter, pet cleanup negligence, or lawn over-watering. Enforcement of such ordinances will decrease the likelihood of indicator bacteria from controllable sources reaching storm drains.

Manure Fertilizer Management Plan: Farms and livestock operations that use manure as a soil amendment, or dispose of manure on site can adopt a manure fertilizer management plan to ensure that manure fertilizers or wastes are stored, used, and disposed of in ways that minimize exposure of manure to stormwater.

Sizing and Location of Facilities: Manure composting and storage facilities, and livestock holding pens, paddocks, and corrals should be properly sized, and sited in areas that do not drain to surface streams.

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[14] USEPA, 1999, National Menu of Best Management Practices for Stormwater-Phase II, *http://cfpub.epa.gov/npdes/stormwater/menuofbmps.*
[15] ibid
[16] ibid

Structural Controls

Structural controls divert, store, and treat stormwater, or infiltrate stormwater into the ground. Structural controls can involve construction and operation activities that create potentially significant environmental impacts.

Buffer Strips and Vegetated Swales: Construct and maintain vegetative buffer strips along roadsides and in medians to slow runoff velocity and increase stormwater infiltration. Replace curbs with vegetated swales to allow highway and road runoff to percolate into the ground. Buffer strips can also be used to keep stormwater out of livestock holding pens, corrals, and paddocks.

Bioretention: Construct and maintain bioretention BMPs to provide on-site removal of pollutants from stormwater runoff through landscaping features.

Infiltration Trenches: Construct and maintain infiltration trenches designed to capture and naturally filter stormwater runoff.

Sand Filters: Install and maintain sand filters, which are effective for pollutant removal from stormwater. Sand filters may be a good option in densely developed urban areas with little pervious surface since the filters occupy minimal space.

Diversion /Treatment Systems: Install diversion systems to capture non-stormwater runoff. During low flow conditions, runoff may be diverted to an on-site treatment system and released back to the MS4/receiving water, or it may be diverted to wastewater collection plants for treatment. Diversion systems consist of berms, roofs, or enclosures that can be used at farms and livestock facilities to drain storm water away from holding pens, paddocks, corrals, and manure composting areas.

Animal Exclusion: Construct fencing, hedgerows, and livestock trails and walkways to exclude animals from streams and riparian areas to prevent direct deposition of feces into surface waters. Alternative water supplies, shade, and forage may need to be provided if animals are excluded from streams and riparian areas.

Waste Treatment Lagoon: Construct liquid manure storage and treatment structures to store and treat facility wastewater and the contaminated runoff from livestock facilities at all times, up to and including storms exceeding a 25-year, 24-hour frequency event.

4 Environmental Checklist

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
1.	**Earth. Will the proposal result in:**				
	a. Unstable earth conditions or in changes in geologic substructures?				X
	b. Disruptions, displacements, compaction or overcoming of the soil?				X
	c. Change in topography or ground surface relief features?				X
	d. The destruction, covering or modification of any unique geologic or physical features?				X
	e. Any increase in wind or water erosion of soils, either on or off the site?				X
	f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?				X
	g. Exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?				X
2.	**Air. Will the proposal result in:**				
	a. Substantial air emissions or deterioration of ambient air quality?				X
	b. The creation of objectionable odors?				X
	c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?				X

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
3.	**Water. Will the proposal result in:**				
	a. Changes in currents, or the course of direction or water movements, in either marine or fresh waters?				X
	b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?				X
	c. Alterations to the course of flow of flood waters?				X
	d. Change in the amount of surface water in any water body?				X
	e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?			X	
	f. Alteration of the direction or rate of flow of ground waters?				X
	g. Change in the quantity or quality of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?				X
	h. Substantial reduction in the amount of water otherwise available for public water supplies?				X
	i. Exposure of people or property to water related hazards such as flooding or tidal waves?				X
4.	**Plant Life. Will the proposal result in:**				
	a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?				X
	b. Reduction of the numbers of any unique, rare or endangered species of plants?				X

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
	c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?				X
	d. Reduction in acreage of any agricultural crop?				X
5.	**Animal Life. Will the proposal result in:**				
	a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?				X
	b. Reduction of the numbers of any unique, rare or endangered species of animals?				X
	c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?				X
	d. Deterioration to existing fish or wildlife habitat?				X
6.	**Noise. Will the proposal result in:**				
	a. Increases in existing noise levels?				X
	b. Exposure of people to severe noise levels?				X
7.	**Light and Glare. Will the proposal:**				
	a. Produce new light or glare?				X
8.	**Land Use. Will the proposal result in:**				
	a. Substantial alteration of the present or planned land use of an area?				X
9.	**Natural Resources. Will the proposal result in:**				
	a. Increase in the rate of use of any natural resources?				X

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
	b. Substantial depletion of any nonrenewable natural resource?				X
10.	**Risk of Upset. Will the proposal involve:**				
	a. A risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?				X
11.	**Population. Will the proposal:**				
	a. Alter the location, distribution, density, or growth rate of the human population of an area?				X
12.	**Housing. Will the proposal:**				
	a. Affect existing housing, or create a demand for additional housing?				X
13.	**Transportation/Circulation. Will the proposal result in:**				
	a. Generation of substantial additional vehicular movement?				X
	b. Effects on existing parking facilities, or demand for new parking?				X
	c. Substantial impact upon existing transportation systems?				X
	d. Alterations to present patterns of circulation or movement of people and/or goods?				X
	e. Alterations to waterborne, rail or air traffic?				X
	f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?				X
14.	**Public Service. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of**				

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
	the following areas:				
	a. Fire protection?				X
	b. Police protection?				X
	c. Schools?				X
	d. Parks or other recreational facilities?				X
	e. Maintenance of public facilities, including roads?				X
	f. Other governmental services?				X
15.	**Energy. Will the proposal result in:**				
	a. Use of substantial amounts of fuel or energy?				X
	b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?				X
16.	**Utilities and Service Systems. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:**				
	a. Power or natural gas?				X
	b. Communications systems?				X
	c. Water?				X
	d. Sewer or septic tanks?				X
	e. Storm water drainage?				X
	f. Solid waste and disposal?				X
17.	**Human Health. Will the proposal result in:**				
	a. Creation of, and exposure of people to, any health hazard or potential health hazard (excluding mental health)?			X	

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
18.	**Aesthetics. Will the proposal result in:**				
	a. The obstruction of any scenic vista or view open to the public?				X
	b. The creation of an aesthetically offensive site open to public view?				X
19.	**Recreation. Will the proposal result in:**				
	a. Impact upon the quality or quantity of existing recreational opportunities?			X	
20.	**Archeological/Historical. Will the proposal:**				
	a. Result in the alteration of a significant archeological or historical site, structure, object or building?				X
21.	**Mandatory Findings of Significance**				
	Potential to degrade: Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
	Short-term: Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)				X
	Cumulative: Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is				X

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant	No Impact
	relatively small, but where the effect of the total of those impacts on the environment is significant.)				
	Substantial adverse: Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

5 Discussion of Possible Environmental Impacts of Reasonably Foreseeable Compliance Methods and Mitigation Measures

The environmental analysis must include an analysis of the reasonably foreseeable environmental impacts of the methods of compliance and the reasonably foreseeable feasible mitigation measures relating to those impacts. This section, consisting of answers to the questions in the checklist, discusses compliance methods and mitigation measures as they pertain to the checklist.

In answering the checklist questions, this section evaluates the impacts of implementing programs subject to indicator bacteria TMDLs that incorporate the Basin Plan amendment's RSAA or NSEA, as opposed to implementing programs subject to indicator bacteria TMDLs that do not incorporate the Basin Plan amendment's RSAA or NSEA. In other words, implementation of indicator bacteria TMDLs that do not incorporate the Basin Plan amendment's RSAA or NSEA serves as the baseline condition. Since utilization of the Basin Plan amendment's RSAA or NSEA will allow for WLAs/LAs assigned to dischargers to increase, required reductions in indicator bacteria loads will be lessened, resulting in reduced implementation of BMPs. This is significant, because BMP implementation is the primary source of environmental impacts associated with achieving compliance with indicator bacteria TMDL WLAs/LAs. As such, the decreased level of BMP implementation resulting from the Basin Plan amendment will reduce environmental impacts for the vast majority of the issues represented by the environmental checklist questions. In these cases, our answers to the questions in the checklist are brief, noting that the Basin Plan amendment essentially reduces the magnitude of the methods of compliance, thereby reducing environmental impacts. However, in the few instances where reduced BMP implementation has the potential to cause environmental impacts, our responses to the environmental checklist questions are more detailed.

Potential reasonably foreseeable impacts were evaluated with respect to earth, air, water, plant life, animal life, noise, light, land use, natural resources, risk of upset, population, housing, transportation, public services, energy, utilities and services systems, human health, aesthetics, recreation, and

archeological/historical concerns. Additionally, mandatory findings of significance regarding short-term, long-term, cumulative and substantial impacts were evaluated.

A significant effect on the environment is defined in regulation as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. A social or economic change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."[17]

A significant effect on the environment is defined in statute as "a substantial, or potentially substantial, adverse change in the environment" where "Environment" is defined by Public Resources Code section 21060.5 as "the physical conditions which exist within the area which will be affected by a proposed project, including air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance."[18]

The evaluation considered whether construction or implementation of non-structural and structural BMPs would cause substantial, adverse environmental changes. In addition, the evaluation considered environmental impacts based upon a potential reduction in non-structural and structural BMP implementation that may result from adoption of the Basin Plan amendment. Based on this review, we concluded that the potential impacts resulting from the Basin Plan amendment are less than significant. As discussed above, the level of significance was based on baseline conditions (i.e., implementation of programs in accordance with indicator bacteria TMDLs that do not incorporate the Basin Plan amendment's RSAA or NSEA). Construction of structural BMPs was considered to have no short-term impacts due to the likely reduction in structural BMP construction resulting from the Basin Plan amendment. Implementation of structural BMPs was considered to have no impact for the same reason. However, the potential reduction in BMP implementation was considered to have a less than significant impact due to increased indicator bacteria loads that could result.

Social or economic changes related to a physical change of the environment were also considered in determining whether there would be a significant effect on the environment. However, adverse social and economic impacts alone are not significant effects on the environment.

[17] 14 CCR section 15382
[18] Public Resources Code section 21068

1. Earth. a. Will the proposal result in unstable earth conditions or in changes in geologic substructure?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, unstable earth conditions or changes in geologic substructure resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

1. Earth. b. Will the proposal result in disruptions, displacements, compaction or overcoming of the soil?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, disruptions, displacements, compaction, or overcoming of the soil resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

1. Earth. c. Will the proposal result in change in topography or ground surface relief features?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in topography or ground surface relief features resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

1. Earth d. Will the proposal result in the destruction, covering or modification of any unique geologic or physical features?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented.

Therefore, destruction, covering or modification of any unique geologic or physical features resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

1. **Earth. e.** Will the proposal result in any increase in wind or water erosion of soils, either on or off the site?

   Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, wind or water erosion of soils resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

1. **Earth. f.** Will the proposal result in changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?

   Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in deposition and erosion resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

1. **Earth. g.** Will the proposal result in exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?

   Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, exposure of people or property to geologic hazards resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

2. Air. a. Will the proposal result in substantial air emissions or deterioration of ambient air quality?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, air emissions or deterioration of ambient air quality resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

2. Air. b. Will the proposal result in creation of objectionable odors?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, objectionable odors resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

2. Air. c. Will the proposal result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alteration of air movement, moisture or temperature, or climate resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. a. Will the proposal result in changes in currents, or the course of direction or water movements, in either marine or fresh waters?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in currents or water movements resulting from non-

structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. b. Will the proposal result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in absorption rates, drainage patterns, and surface runoff resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. c. Will the proposal result in alterations to the course of flow of flood waters?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alterations to the course of flow of flood waters resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. d. Will the proposal result in change in the amount of surface water in any water body?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in the amount of surface water resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. e. Will the proposal result in discharge to surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?

Answer: Less than significant impact

Discussion: Indicator bacteria TMDLs that do not incorporate the Basin Plan amendment's RSAA or NSEA will require reductions in discharges of indicator bacteria so that WLAs/LAs are achieved, regardless of the sources of the indicator bacteria. TMDLs incorporating the Basin Plan amendment's RSAA or NSEA, however, will not require indicator bacteria from natural uncontrollable nonpoint sources to be controlled. As a result, the Basin Plan amendment will increase indicator bacteria TMDL WLAs/LAs, which has the potential to result in larger indicator bacteria loads in water bodies subject to indicator bacteria TMDLs. However, the allowable indicator bacteria loads will be consistent with indicator bacteria loads attributable to natural uncontrollable nonpoint sources. This is because the RSAA included in the Basin Plan amendment only allows indicator bacteria water quality objectives to be exceeded at the same frequency as observed in a natural reference system. The RSAA also requires that any BMPs implemented in accordance with indicator bacteria TMDLs must address anthropogenic indicator bacteria sources, as opposed to natural uncontrollable sources. Likewise, the NSEA included in the Basin Plan only allows exceedances of indicator bacteria water quality objectives provided that all anthropogenic sources of indicator bacteria are controlled. The NSEA also requires that remaining indicator bacteria densities in a target water body do not indicate a health risk to those swimming in the water body.

Since any increase in indicator bacteria loads will be consistent with indicator bacteria loads stemming from natural sources, the Basin Plan amendment's impact to water quality is less than significant. Maintenance of water quality parameters at natural levels is not a significant environmental impact. Moreover, it is not the intent of the San Diego Water Board to require treatment of indicator bacteria from natural sources, since such indicator bacteria may play an beneficial role in the ecosystem, whereby treatment could adversely affect valuable aquatic life and wildlife beneficial uses.

3. Water. f. Will the proposal result in alteration of the direction or rate of flow of groundwaters?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alteration of the direction or rate of flow of groundwaters resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. g. Change in the quantity or quality of groundwaters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in the quantity or quality of groundwaters resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. h. Will the proposal result in substantial reduction in the amount of water otherwise available for public water supplies?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, reduction in public water supplies resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

3. Water. i. Will the proposal result in exposure of people or property to water related hazards such as flooding or tidal waves?

Answer: No impact.

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, exposure of people or property to water related hazards resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

4. Plant Life. a. Will the proposal result in change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in the diversity or number of plant species resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

4. Plant life. b. Will the proposal result in reduction of the numbers of any unique, rare or endangered species of plants?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, reduction in the numbers of unique, rare, or endangered plant species resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

4. Plant life. c. Will the proposal result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, introduction of new plant species or barriers to replenishment of existing species resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

4. Plant life. d. Will the proposal result in reduction in acreage of any agricultural crop?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, reduction in acreage of agricultural crops resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

5. Animal Life. a. Will the proposal result in change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, changes in the diversity or numbers of animal species resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

5. Animal Life. b. Will the proposal result in reduction of the numbers of any unique, rare or endangered species of animals?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, reduction of the numbers of any unique, rare, or endangered animal species resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

5. Animal Life. c. Will the proposal result in introduction of new species of animals into an area, or in a barrier to the migration or movement of animals?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, introduction of new animal species or barriers to animal migration or movement resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

5. Animal Life. d. Will the proposal result in deterioration to existing fish or wildlife habitat?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, deterioration of existing fish or wildlife habitat resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

6. Noise. a. Will the proposal result in increases in existing noise levels?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, increases in existing noise levels resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

6. Noise. b. Will the proposal result in exposure of people to severe noise levels?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, exposure of people to severe noise levels resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

7. Light and Glare. Will the proposal produce new light or glare?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, new light or glare resulting from non-structural and structural BMP

implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

8. Land Use. Will the proposal result in substantial alteration of the present or planned land use of an area?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alteration of present or planned land use resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

9. Natural Resources. a. Will the proposal result in increase in the rate of use of any natural resources?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, increases in the rate of use of natural resources resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

9. Natural Resources. b. Will the proposal result in substantial depletion of any non-renewable natural resource?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, depletion of non-renewable resources resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

10. Risk of Upset. Will the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, risk of explosion or release of hazardous substances resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alteration of the location, distribution, density, or growth rate of the human population resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects to existing housing or creation of demand for additional housing resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

13. Transportation/Circulation. a. Will the proposal result in generation of substantial additional vehicular movement?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, vehicular movement resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

13. Transportation/Circulation. b. Will the proposal result in effects on existing parking facilities, or demand for new parking?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects on existing parking facilities or demand for new parking resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

13. Transportation/Circulation. c. Will the proposal result in substantial impacts upon existing transportation systems?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, impacts upon existing transportation systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

13. Transportation/Circulation. d. Will the proposal result in alterations to present patterns of circulation or movement of people and/or goods?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alterations to patterns of movement of people or goods resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

13. Transportation/Circulation. e. Will the proposal result in alterations to waterborne, rail or air traffic?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alterations to waterborne, rail, or air traffic resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

13. Transportation/Circulation. f. Will the proposal result in increase in traffic hazards to motor vehicles, bicyclists or pedestrians?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, increases in traffic hazards resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

14. Public Service. a. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Fire protection?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects upon fire protection resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

14. Public Service. b. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Police protection?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects upon police protection resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

14. Public Service. c. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Schools?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects upon schools resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

14. Public Service. d. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Parks or other recreational facilities?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects upon parks or other recreational facilities resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

14. Public Service. e. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: maintenance of public facilities, including roads?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects upon public facilities resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

14. Public Service. f. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: other government services?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, effects upon governmental services resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

15. Energy. a. Will the proposal result in use of substantial amounts of fuel or energy?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, use of fuel or energy resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

15. Energy. b. Will the proposal result in a substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, increases in demand for existing or new sources of energy resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

16. Utilities and Service Systems. a. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: power or natural gas?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, need for new or altered power or natural gas systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

16. Utilities and Service Systems. b. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: communications systems?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, need for new or altered communications systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

16. Utilities and Service Systems. c. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: water?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, need for new or altered water systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

16. Utilities and Service Systems. d. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: Sewer or septic tanks?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, need for new or altered sewer or septic tank systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

16. Utilities and Service Systems. e. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: stormwater drainage?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, need for new or altered stormwater drainage systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

16. Utilities and Service Systems. f. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: solid waste and disposal?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, need for new or altered solid waste and disposal systems resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

17. Human Health. a. Will the proposal result in creation of, and exposure of people to, any health hazard or potential health hazard (excluding mental health)?

Answer: Less than significant impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, health hazards resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will generally

remain the same or be reduced. As an example, potential health hazards associated with the generation of unstable earth conditions during structural BMP implementation are not expected to increase, since overall structural BMP implementation will be reduced under the Basin Plan amendment. The same is true for other potential health hazards associated with implementation of non-structural and structural BMPs in accordance with indicator bacteria TMDLs.

However, as discussed in response to Question 3.e, a reduction in non-structural and structural BMP implementation in response to the Basin Plan amendment could result in higher indicator bacteria loads in water bodies than would otherwise be observed if the Basin Plan amendment were not adopted. While higher indicator bacteria loads could occur, any additional loads would be consistent with indicator bacteria loads attributable to natural nonpoint sources. This is because the RSAA included in the Basin Plan amendment only allows indicator bacteria water quality objectives to be exceeded at the same frequency as observed in a natural reference system. The RSAA also requires that any BMPs implemented in accordance with indicator bacteria TMDLs must address anthropogenic indicator bacteria sources, as opposed to natural uncontrollable sources. Likewise, the NSEA included in the Basin Plan amendment only allows exceedances of water quality objectives provided that all anthropogenic sources of indicator bacteria have been controlled. The NSEA also requires that remaining indicator bacteria densities in a target water body do not indicate a health risk to those swimming in the water body.

Since any increase in indicator bacteria loads would be consistent with indicator bacteria loads stemming from natural sources, the potential health hazard posed by adoption of the Basin Plan amendment is expected to be less than significant. Although animal sources can harbor disease-causing agents, they are less likely to serve as sources of some human enteric diseases, especially those diseases caused by enteric viruses.[19] This finding is supported by a study conducted in Mission Bay, which found the lack of a relationship between nonhuman sources of fecal indicator bacteria and human health risk.[20] Moreover, it is not the intent of the San Diego Water Board to require treatment of indicator bacteria from natural sources, since such indicator bacteria may play an beneficial role in the ecosystem, whereby treatment could adversely affect valuable aquatic life and wildlife beneficial uses.

[19] National Research Council, 2004. Indicators for Waterborne Pathogens. Washington, DC: National Academies Press. As cited in Colford, John M. et al., 2007. Water Quality Indicators and the Risk of Illness at Beaches With Nonpoint Sources of Fecal Contamination. Epidemiology. Volume 18, Number 1.
[20] Colford, John M. et al., 2007. Water Quality Indicators and the Risk of Illness at Beaches With Nonpoint Sources of Fecal Contamination. Epidemiology. Volume 18, Number 1.

18. Aesthetics. a. Will the proposal result in the obstruction of any scenic vista or view open to the public?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, obstruction of any scenic vista or view resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

18. Aesthetics. b. Will the proposal result in the creation of an aesthetically offensive site open to public view?

Answer: No impact

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, creation of aesthetically offensive site resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

19. Recreation. a. Will the proposal result in impact on the quality or quantity of existing recreational opportunities?

Answer: Less than significant with mitigation

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, impacts to recreational activities resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will generally remain the same or be reduced. As an example, potential impacts to recreational opportunities associated with construction of structural BMPs are not expected to increase, since overall structural BMP implementation will be reduced under the Basin Plan amendment. The same is true for other potential impacts to recreational opportunities associated with implementation of non-structural and structural BMPs in accordance with indicator bacteria TMDLs.

However, as discussed in Questions 3.e and 17.a, a reduction in non-structural and structural BMP implementation in response to the Basin Plan amendment could result in higher indicator bacteria loads in water bodies subject to indicator bacteria TMDLs than would otherwise be observed if the Basin Plan amendment were not implemented. While higher indicator bacteria loads could occur, any increases would be consistent with indicator bacteria loads attributable to natural uncontrollable nonpoint sources. This is because the RSAA included in the Basin Plan amendment only allows indicator bacteria water quality objectives to be exceeded at the same frequency as observed in a natural reference system. The RSAA also requires that any BMPs implemented in accordance with indicator bacteria TMDLs must address anthropogenic indicator bacteria sources, as opposed to natural uncontrollable sources. Likewise, the NSEA included in the Basin Plan amendment only allows exceedances of water quality objectives provided that all anthropogenic sources of indicator bacteria have been controlled. The NSEA also requires that remaining indicator bacteria densities in a water body do not indicate a health risk to those swimming in the water body.

Increased indicator bacteria loads resulting from decreased BMP implementation have the potential to impact the REC-1 beneficial use. However, since any increase in indicator bacteria loads would be consistent with indicator bacteria loads stemming from natural uncontrollable sources, potential impacts are expected to be less than significant. Although animal sources can harbor disease-causing agents, they are less likely to serve as sources of some human enteric diseases, especially those diseases caused by enteric viruses.[21] This finding is supported by a study conducted in Mission Bay, which found the lack of a relationship between nonhuman sources of fecal indicator bacteria and human health risk.[22] Moreover, it is not the intent of the San Diego Water Board to require treatment of indicator bacteria from natural sources, since such indicator bacteria may play an beneficial role in the ecosystem, whereby treatment could adversely affect valuable aquatic life and wildlife beneficial uses.

20. Archeological/Historical a. Will the proposal result in the alteration of a significant archeological or historical site, structure, object or building?

Answer: No impact

[21] National Research Council, 2004. Indicators for Waterborne Pathogens. Washington, DC: National Academies Press. As cited in Colford, John M. et al., 2007. Water Quality Indicators and the Risk of Illness at Beaches With Nonpoint Sources of Fecal Contamination. Epidemiology. Volume 18, Number 1.

[22] Colford, John M. et al., 2007. Water Quality Indicators and the Risk of Illness at Beaches With Nonpoint Sources of Fecal Contamination. Epidemiology. Volume 18, Number 1.

Discussion: The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, alteration of archeological or historical resources resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

21. Mandatory Findings of Significance - Potential to degrade: Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Answer: Less than significant impact

Discussion: The only impact identified as resulting from adoption of the Basin Plan amendment is potentially higher indicator bacteria loads in water bodies subject to indicator bacteria TMDLs. However, any additional indicator bacteria loads would be consistent with indicator bacteria loads attributable to natural nonpoint sources. The RSAA included in the Basin Plan amendment ensures that indicator bacteria loads consistent with those observed in a natural reference system. The RSAA also requires that any BMPs implemented in accordance with indicator bacteria TMDLs must address anthropogenic indicator bacteria sources, as opposed to natural uncontrollable sources. Likewise, the NSEA included in the Basin Plan amendment only allows exceedances of water quality objectives provided that all anthropogenic sources of indicator bacteria have been controlled. The NSEA also requires that remaining indicator bacteria densities in a target water body do not indicate a health risk to those swimming in the water body.

Since any increase in indicator bacteria loads would be consistent with indicator bacteria loads stemming from natural sources, the potential to degrade the environment is less than significant. Maintenance of indicator bacteria loads at natural background levels does not significantly impact environmental factors such as fish or wildlife habitat or populations, plant or animal communities, endangered plants or animals, or California history or pre-history.

21. Mandatory Findings of Significance - Short-term: Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)

Answer: No impact

Discussion: The environmental goal of the Basin Plan amendment is to require control of all anthropogenic sources of indicator bacteria and maintenance of indicator bacteria loads at natural background levels. This is a long-term goal, since it is to be implemented in accordance with indicator bacteria TMDL WLAs/LAs, which are expected to have compliance schedules of ten years or more. Moreover, once indicator bacteria TMDL WLAs/LAs are achieved, they are expected to be maintained into the future. As such, the Basin Plan amendment does not achieve short-term environmental goals to the detriment of long-term environmental goals.

21. Mandatory Findings of Significance - Cumulative: Does the project have impacts which are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Answer: No impact

Discussion: Cumulative impacts, defined in section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed Basin Plan amendment, but also the impacts from other Basin Plan amendment, municipal, and private projects, which have occurred in the past, are presently occurring, and may occur in the future.

The Basin Plan amendment will result in a reduction in the number and extent of non-structural and structural BMPs implemented. Therefore, cumulative impacts resulting from non-structural and structural BMP implementation associated with indicator bacteria TMDLs will remain the same or be reduced.

Only one other impact is anticipated from implementation of indicator bacteria TMDLs utilizing the Basin Plan amendment. This impact is higher indicator bacteria loads in water bodies subject to indicator bacteria TMDLs. These higher indicator bacteria loads have the potential to cause less than

significant impacts to water quality, human health, and recreational opportunities. It is not anticipated that these less that significant impacts will result in significant cumulative impacts. The reason for this is that any past, present, or future projects that have the potential to increase indicator bacteria loads in areas where the Basin Plan amendment applies will be subject to indicator bacteria TMDLs themselves. The indicator bacteria TMDLs will prevent indicator bacteria load increases, and in most cases will require indicator bacteria load reductions. This will prevent cumulative impacts from occurring as a result of increased indicator bacteria loads stemming from the Basin Plan amendment.

21. Mandatory Findings of Significance - Substantial adverse: Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Answer: Less than significant impact

Discussion: All of the potential impacts associated with the Basin Plan amendment are less than significant or will have no impact. Therefore, the Basin Plan amendment will not directly or indirectly cause substantial adverse effects on human beings.

5.1 Alternative Means of Compliance

Since the Basin Plan amendment does not result in significant impacts to the environment, an analysis of alternative means of compliance with the Basin Plan amendment is not required. The purpose of an alternative means of compliance analysis is to assess alternative means of compliance that will avoid or eliminate identified impacts.[23] Since no significant impacts resulting from the Basin Plan amendment have been identified, this analysis is not necessary.

6 Reasonably Foreseeable Methods of Compliance at Specific Sites

The San Diego Water Board analyzed various reasonably foreseeable methods of compliance at specific sites within the Region. The most reasonably foreseeable methods of compliance at specific sites are for dischargers to implement structural and non-structural BMPs to reduce pollutant loads in their discharges. Because the Basin Plan amendment is large in scope (encompassing the entire Region), the specific sites analysis was focused on reviewing potential compliance methods within various land uses. The land uses cited below correspond to the land uses that were utilized for watershed model development for the *Total Maximum Daily Loads for Indicator Bacteria Project I – Beaches and Creeks in the San Diego Region*. Land uses in this analysis

[23] 14 CCR section 15187(c)(3)

include: dairies/intensive livestock/horse ranches, transitional (construction areas), agriculture, residential, parks/recreation, commercial/institutional, industrial/transportation, and military. These land uses represent a range of population densities and geographical settings found in the San Diego Region. Although all of these land uses generate indicator bacteria, the ones that have the highest human and/or animal population densities are the most likely to produce human pathogens that can pollute surface waters and impair beneficial uses.

In this discussion of potential compliance methods, the San Diego Water Board assumed that, generally speaking, the BMPs suitable for the control of indicator bacteria generated from a specific land use within a given watershed are also suitable for the control of indicator bacteria generated from the same land use category within a different watershed. For example, a BMP used to control the discharge of indicator bacteria from a residential area in the San Diego River watershed is likely suitable to control the discharge of indicator bacteria from a residential area in the Aliso Creek watershed. However, in addition to land use, BMP selection includes consideration of site-specific geographical factors such as average rainfall, soil type, and the amount of impervious surfaces, and non-geographical factors such as available funding. Such factors vary between watersheds. The most suitable BMP(s) for a particular site must be determined by the dischargers in a detailed, project-specific environmental analysis.

The following discussion involves a programmatic level review of specific site compliance methods, or a combination of compliance methods that have been implemented in the subject watersheds, as well as other BMP examples that could potentially be implemented at additional sites. The dischargers are in no way limited to using the BMPs included here to achieve TMDL compliance, and may choose not to implement these particular BMPs.

In order to meet TMDL requirements, dischargers will determine and implement the actual compliance method(s) after a thorough analysis of the specific sites suitable for BMP implementation within each watershed. In most cases, the San Diego Water Board anticipates a potential strategy to be the use of non-structural BMPs as a first step in controlling indicator bacteria discharges, followed by structural BMP installation if necessary.

6.1 Potential BMPs for Dairy/ Intensive Livestock Areas and Horse Ranches

Livestock and horse ranch areas in the San Diego Region are usually found in rural areas with lower population densities than the urbanized areas. However, small horse ranches and individual horse corrals are sometimes found within urbanized areas with higher population densities.[24]

[24] The US Census Bureau's 2000 data reported the City of San Diego to have a population density of 3,771 people per square mile.

Examples of management measures to achieve TMDL compliance include ensuring that livestock and horse holding pens, paddocks, and corrals are properly sized and sited in areas that do not drain to surface streams. Additionally, animal waste should be properly managed (i.e., stored in a manner that prevents leaching pollutants into runoff and prevents runoff from reaching waterways during a rain event.

Examples of structural BMPs include the installation of roof gutters to prevent rain water from mixing with manure and causing erosion, or diversion structures, such as vegetative strips, that absorb runoff and prevent it from reaching waterways. Another example includes the construction of animal exclusion devices, such as fences or other physical barriers, to keep animals out of the creeks, as shown in Figures 1 and 2. Figure 1 depicts a galvanized fence that is useful for keeping dairy cows from the Konyn Dairy in Escondido, California, (background) out of the creek bed (foreground). However, this control would be more effective if set back farther from the creek bank and with a vegetative strip between the fence and the creek bank. Figure 2 shows a similar fencing device that is useful for keeping horses confined and away from surface waters. No adverse environmental effects are expected as a result of implementing these types of BMPs.

Figure 1. Animal Exclusion Device at Konyn Dairy, Valley Center Road, San Dieguito Watershed.

Figure 2. Animal Exclusion Device at Happy Trails Horse Ranch, Black Mountain Road, Penasquitos Watershed.

6.2 Potential BMPs for Construction Sites

Construction activities typically take place in various settings and existing land uses. In San Diego County, construction activities result in new residential units both in urban and suburban environments, as well as industrial and commercial sites, such as business parks and shopping malls. Population densities in the areas of construction vary greatly with the specific projects.

A potential strategy to achieve TMDL compliance includes the use of structural BMPs, such as fiber rolls as shown in Figure 3. Other examples include compost blankets, netting, silt fences, or filter berms. Such devices prevent pollutants such as indicator bacteria and sediment from reaching stormwater and stormwater drainage pathways by allowing the water and contaminants to infiltrate into the surrounding soil. Still other BMPs that are appropriate to use at construction sites include the use of sandbags, such as the ones shown in Figure 4. Sandbags also prevent runoff containing pollutants from reaching stormwater drainage pathways.

Possible adverse environmental effects include the reduction or elimination of storm flows from the use of structural barriers that prevent flow from reaching creek beds. Although such devices prevent pollutants from reaching receiving waters, so do they prevent water from reaching areas that might depend on it to provide habitat. Additionally, infiltration devices could alter the flow rate of groundwater. However, since the Basin Plan amendment will result in a reduction in the implementation of BMPs, these adverse environmental effects will be reduced by the Basin Plan amendment.

Figure 3. Use of Netting and Fiber Rolls at San Elijo Hills Construction Site, Northstar Way, Carlsbad Watershed.

Figure 4. Use of Sandbags upstream of Moonlight State Beach, Encinitas Blvd., Carlsbad Watershed.

6.3 Potential BMPs for Agricultural Areas

In the San Diego Region, there are few agricultural areas compared to other regions in the state, such as the Central Valley. Agricultural areas account for about 12 percent of the land in the region and have lower population densities than urbanized areas.

Examples of reasonably foreseeable management measures to achieve TMDL compliance include irrigation practices that control the volume and flow rate of runoff water, thereby keeping the soil in place, and reducing soil transport (bacteria and pathogens can adsorb to sediment particles). This is especially

important where manure fertilizers are applied to agricultural fields. Examples of structural BMPs include the use of sandbags (see Figure 5) to prevent runoff containing pollutants from agricultural fields, such as the strawberry fields located in Carlsbad, California, (background) from reaching the storm drains that protect flooding of the adjacent roadways (foreground). Possible adverse environmental effects include the reduction or elimination of storm flows from the use of structural barriers (sandbags) that prevent flow from reaching creek beds. Although such devices prevent pollutants from reaching receiving waters, so do they prevent water from reaching areas that might depend on it to provide habitat. However, since the Basin Plan amendment will result in a reduction in the implementation of BMPs, these adverse environmental effects will be reduced by the Basin Plan amendment.

Figure 5. Use of Sandbags near Strawberry Fields, Cannon Rd. near Interstate 5, Carlsbad Watershed.

6.4 Potential BMPs for Residential Areas

Residential areas comprise about 15 percent of the land use in the San Diego Region. Population densities tend to be highest in the residential areas as compared to other land use categories. Thus, residential areas have the highest potential for producing human pathogens that can contaminate surface waters.

In order to achieve TMDL compliance, residential land use areas, like the area shown in Figure 6, may only require non-structural BMPs; however, structural BMPs could be retrofitted, if appropriate. Potential non-structural BMPs at this specific site include increased street sweeping, and development and enforcement of municipal ordinances prohibiting the discharge of indicator bacteria and nuisance flows to stormwater and stormwater drainage pathways. Other potential BMPs include adoption and enforcement of ordinances to pick up

pet waste, and regular inspections of storm drains for cross connections with the sanitary sewers.

Potential structural BMPs include the installation of storm drain filter sacks, which require routine maintenance. Newer residential areas, including the one shown in Figure 7, could be designed with vegetative strips to control the velocity of runoff, increase infiltration, and prevent pollutants from entering stormwater drainage pathways.

Possible adverse environmental effects include the reduction or elimination of storm flows by the use of structural barriers that prevent flow from reaching creek beds. Although such mechanisms prevent pollutants from reaching receiving waters, so do they prevent water from reaching areas that might depend on it to provide habitat. Additionally, infiltration devices could alter the flow rate and/or quality of groundwater. However, since the Basin Plan amendment will result in a reduction in the implementation of BMPs, these adverse environmental effects will be reduced by the Basin Plan amendment.

Figure 6. Clean Storm Drain in Residential Area, D Street, Carlsbad Watershed

Figure 7. Vegetative Strip in Residential Area, San Elijo Hills, Carlsbad Watershed

6.5 Potential BMPs for Park and Recreational Areas

Park and recreational areas make up less than 1 percent of the total land area in the San Diego Region. Because these areas do not have housing or industrial units, population densities in these areas are low. However, parks and recreational areas may have significant use as dog walking areas, and be at risk for accumulating pet wastes.

In order to achieve TMDL compliance, park and recreational areas, like the dog park shown in Figure 8, may only require non-structural controls to encourage responsible actions by pet owners, and efficient irrigation practices that do not result in runoff leaving the site. Potential non-structural controls at this specific site include the availability of pet waste plastic bags and garbage cans. Other non-structural BMPs include the enforcement of pet waste ordinances (see Figure 9). No adverse environmental effects are expected from such measures.

Figure 8. Plastic Bag Dispenser at Mayflower Dog Park, Valley Center Road, San Dieguito Watershed.

Figure 9. Municipal Code Signage at Mayflower Dog Park, Valley Center Road, San Dieguito Watershed.

Some park and recreation areas provide land that can be used to treat pollutants originating from the upstream watershed. For example, structural BMPs, such as the constructed wetlands shown in Figure 10, can be incorporated into a park setting. Such devices provide wildlife habitat, are visually pleasing, and are successful at reducing or removing a number of pollutants from the creeks. Figure 11 shows Cottonwood Creek Park in Encinitas, California, in the foreground, and the constructed wetlands in the background. Bioassessments

performed in this manufactured wetlands before and after construction demonstrated that this project did not result in any adverse environmental effects.[25]

Figure 10. Manufactured Wetlands at Cottonwood Creek Park, Encinitas Blvd., Carlsbad Watershed.

Figure 11. Cottonwood Creek Park, Encinitas Blvd., Carlsbad Watershed.

6.6 Potential BMPs for Commercial/Institutional Areas

Commercial and institutional areas account for approximately 2.75 percent of the land use in the San Diego Region (commercial and institutional areas were

[25] Kathy Weldon, City of Encinitas, personal communication, February 6, 2007.

analyzed as one land use in the watershed models). Population densities vary on an hourly basis but are relatively high in these areas, compared to other land uses.

A potential strategy to achieve TMDL compliance includes non-structural controls, which may be sufficient to limit indicator bacteria discharges. Commercial businesses and keepers of school grounds should use cleaning practices that contain pollutants instead of allowing them to enter conveyance systems. For example, debris and other waste should be swept up and disposed of properly, and trash receptacles should be available and properly maintained. Potential structural BMPs include the installation of vegetative strips and grassy areas as part of landscaping to control the velocity of runoff, increase infiltration, and prevent pollutants from entering stormwater drainage pathways. Possible adverse environmental effects include alteration of the flow rate and/or quality of groundwater from the use of infiltration devices. However, since the Basin Plan amendment will result in a reduction in the implementation of BMPs, these adverse environmental effects will be reduced by the Basin Plan amendment.

Another potential structural BMP that could be utilized in areas where storm drains discharge directly into receiving waters with high recreational use is a dry weather diversion, which are widely used near popular swimming beaches. Dry weather diversions are effective at reducing or removing urban runoff, or nuisance flows, from reaching receiving waters by directing them into sewer systems. These BMPs are suitable in land use categories where the specific site has similar hydrologic settings (dry weather nuisance flows discharging directly into receiving waters).

6.7 Potential BMPs for Industrial and Transportation Areas

Industrial and transportation areas account for about 1.6 percent of the total land area in the San Diego Region. As with the previous discussion, population densities are variable, depending on time of day and also day of week.

Several industrial parks and roadways have adjacent landscaped areas where both management areas and structural BMPs could be designed to help reduce indicator bacteria discharges to surface waters. Management measures include using manure fertilizers sparingly, and efficient irrigation practices that minimize the amount of runoff leaving the site. Landscaping can be designed to capture and control the velocity of runoff, increase infiltration, and prevent pollutants from entering stormwater drainage pathways. Additionally, pervious surfaces near transportation areas often have steep slopes. To prevent erosion and the transport of sediment and indicator bacteria to stormwater drainage pathways, various structural BMPs can be used. Some examples are fiber rolls, netting, and compost blankets.

Possible adverse environmental effects include the reduction or elimination of nuisance dry weather flows from the use of structural barriers that prevent flow

from reaching creek beds. Although such devices prevent pollutants from reaching receiving waters, so do they prevent water from reaching areas that might depend on it to provide habitat. Additionally, infiltration devices could alter the flow rate and/or quality of groundwater. However, since the Basin Plan amendment will result in a reduction in the implementation of BMPs, these adverse environmental effects will be reduced by the Basin Plan amendment.

6.8 Potential BMPs for Military Areas

Military areas account for about 1 percent of the land area in the San Diego Region and have relatively high population densities, as compared to most land uses. Although military areas are treated as an independent land use for TMDL analysis, military areas are actually comprised of the various aforementioned land uses. Military areas have residential, commercial, and transportation areas, for example. Therefore the applicable structural and non-structural BMPs mentioned for possible use in these land uses would also be suitable in military areas.

7 Economic Factors

This section presents the San Diego Water Board's economic analysis of the most reasonably foreseeable methods of compliance with the Basin Plan amendment.

7.1 Legal Requirement for Economic Analysis

The Basin Plan amendment incorporates into the Basin Plan implementation provisions for indicator bacteria water quality objectives. These implementation provisions describe implementation approaches to be used to achieve the water quality objectives for indicator bacteria. As such, the Basin Plan amendment may be considered to include "performance standards."[26] CEQA has specific requirements governing the San Diego Water Board's adoption of regulations such as Basin Plan provisions that establish "performance standards" or treatment requirements.[27] These requirements provide that the San Diego Water Board perform an environmental analysis of the reasonably foreseeable methods of compliance with such adopted regulations. The San Diego Water Board must consider the economic costs of the methods of compliance in this analysis.[28] However, the proposed Basin Plan amendment does not include new water quality objectives, but rather implements existing objectives to protect beneficial uses. The San Diego Water Board is therefore not required to consider the factors in Water Code sections 13241 (a) through (f).

[26] The term "performance standard" is defined in the rulemaking provisions of the Administrative Procedure Act (Government Code sections 11340-l 1359). A "performance standard" is a regulation that describes an objective with the criteria stated for achieving the objective. [Government Code section11342(d)].
[27] Public Resources Code sections 21159 and 21159.4
[28] Public Resources Code section 21159(c)

7.2 Cost Estimates for BMP Implementation

The methods of achieving compliance with indicator bacteria TMDLs while utilizing the Basin Plan amendment is essentially the same as the methods of achieving compliance with indicator bacteria TMDLs without the Basin Plan amendment. For compliance to be achieved in both cases, non-structural and structural BMPs must be implemented. The primary difference between the two approaches is that implementation of fewer non-structural and structural BMPs can be expected under the Basin Plan amendment approach. As such, the Basin Plan amendment is expected to reduce the economic impacts of BMP implementation associated with indicator bacteria TMDLs discussed in the Beaches and Creeks TMDL Technical Report. The level of cost reductions resulting from the Basin Plan amendment will be known once dischargers begin implementation of programs to meet indicator bacteria TMDL WLAs/LAs.

7.3 Cost Estimates for Monitoring

The specific monitoring to be implemented for indicator bacteria TMDLs implemented in accordance with this Basin Plan amendment are to be developed by the dischargers following finalization of the TMDLs. All costs discussed here are only preliminary estimates since particular monitoring elements, such as location, frequency, and method, need to be developed to provide a basis for more accurate cost estimations. Identifying the specific monitoring that dischargers will choose to implement is speculative at this time and the monitoring presented in this section serves only to demonstrate potential costs. Therefore, this section discloses examples of typical costs of monitoring elements that will be necessary under the Basin Plan amendment.

When implementing programs to comply with indicator bacteria TMDLs that employ the Basin plan amendment's provisions, dischargers are expected to conduct monitoring for several purposes: (1) to evaluate the effectiveness of the controls they implement; (2) to demonstrate that all anthropogenic sources of indicator bacteria have been controlled; and (3) to demonstrate that indicator bacteria densities do not indicate a health risk to those swimming in the water body.[29]

Monitoring conducted to evaluate the effectiveness of controls is not expected to differ significantly whether indicator bacteria TMDLs are implemented using the Basin Plan amendment or not. Under both approaches, a monitoring program will need to be implemented for each impaired water body. For this type of monitoring, the Basin Plan amendment is expected to be at least cost neutral. However, since the Basin Plan amendment will result in a reduction in implementation of BMPs, it is also conceivable that monitoring to demonstrate BMP effectiveness will be reduced, potentially resulting in reduced costs for this type of monitoring.

[29] Items (1) and (2) are expected for water bodies where either the RSAA or NSEA is applied. Item (3) is expected for water bodies where the NSEA is applied.

Monitoring conducted to demonstrate that all anthropogenic sources of indicator bacteria have been controlled is expected to include investigations of infrastructure, visual observation to identify ongoing anthropogenic sources, and microbial source tracking. The amount of these types of monitoring to be conducted must be specifically tailored for each impaired water body, since each watershed is different in terms of size, runoff flow, land use, and indicator bacteria sources. However, studies previously conducted can serve as examples of this type of monitoring. Cost incurred during these previous studies provide the basis upon which to evaluate monitoring costs associated with the Basin Plan amendment. Costs incurred to conduct the *Mission Bay Clean Beaches Initiative Bacterial Source Identification Study* are particularly useful, since the study conducted the types of monitoring that will be necessary for use of the Basin Plan amendment.

Investigation of infrastructure in the Mission Bay study cost approximately $240,000. This work included investigation of the lateral sewage lines for 16 comfort stations using closed circuit television. Visual observation to identify ongoing anthropogenic sources cost approximately $250,000 for the Mission Bay study. This work involved collecting water samples for indicator bacteria, as well as visually observing potential indicator bacteria sources, at 12 sites around Mission Bay. Samples were collected at each location for three periods (low, medium, and high use), three times a day (324 samples total). In addition, spot samples were collected when potential indicator bacteria sources were identified (198 samples total). Approximately 1,300 person hours of visual observations were made. Microbial source tracking for the Mission Bay study cost approximately $374,000. Both the host-specific polymerase chain reaction technique and ribotyping analysis were conducted. A total of 1,097 receiving water E. coli isolates were analyzed using the ribotyping technique, while 175 samples were analyzed using the host-specific polymerase chain reaction technique. In considering the costs of the Mission Bay study, the scope of the study must be acknowledged. While the study was conducted at numerous beaches around Mission Bay, it was also limited to the Mission Bay Park area.[30]

Monitoring conducted to demonstrate that indicator bacteria densities do not indicate a health risk to swimmers will involve performance of epidemiological studies. The epidemiological studies will be used to determine if the remaining indicator bacteria densities in the target water body (following control of all anthropogenic sources) are associated with adverse human health outcomes such as gastrointestinal illness, respiratory symptoms, and dermatologic symptoms. Epidemiological studies of a similar nature have been conducted at Santa Monica Bay and San Diego's Mission Bay. In addition, epidemiological

[30] City of San Diego, 2004. Mission Bay Clean Beaches Initiative Bacterial Source Identification Study – Final Report. State Water Resources Control Board, 2004. Standard Agreement Amendment No. 01-087-550-0. Contract for Mission Bay Clean Beaches Initiative Bacterial Source Identification Study. Exhibit B, Budget Detail and Payment Provision.

studies are currently being conducted for Doheny, Avalon, and Malibu beaches. The costs of these studies provide examples of the costs for the epidemiological studies that must be conducted in order for the Basin Plan's NSEA to be used. In general, epidemiological studies of this type cost approximately $1.5-3 million per beach.[31] This cost estimate includes consideration of water sample collection and analysis, survey development, beach recruitment of participants, follow-up interviews, analysis of findings, reporting, and other tasks. While application of the NSEA to any water body requires demonstration that indicator bacteria levels are not indicative of a human health risk, it is not known at this time if epidemiological studies must be conducted for each water body to which the NSEA is applied. One possibility is that epidemiological studies limited to a certain number of water bodies may suffice, provided that the conditions of the water bodies studied are representative of the remaining subject water bodies. For this reason, the specific number of epidemiological studies which that will be necessary cannot be estimated at this time.

8 Reasonable Alternatives to the Proposed Activity

The Basin Plan amendment does not result in any significant or potentially significant impacts to the environment. Therefore, no alternatives to the Basin Plan amendment are proposed, since they are not necessary to avoid or reduce any significant or potentially significant impacts. An analysis of alternatives to the project is not required when review of the project shows that the project would not have any significant or potentially significant effects on the environment.[32]

9 Preliminary Staff Determination

☑ The proposed project COULD NOT have a significant effect on the environment, and, therefore, no alternatives or mitigation measures are proposed.

☐ The proposed project MAY have a significant or potentially significant effect on the environment, and therefore alternatives and mitigation measures have been evaluated.

John H Robertus — 14 May 2008
Signature — Date

JOHN H. ROBERTUS
Executive Officer

[31] Ken Schiff (Southern California Coastal Water Research Project), personal communication, July 27, 2007.
[32] 14 CCR section 15252(a)(2)(B)

Note: Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151, Public Resources Code; Sundstrom v. County of Mendocino, 202 Cal.App.3d 296 (1988); Leonoff v. Monterey Board of Supervisors, 222 Cal.App.3d 1337 (1990).