

Technical Memorandum

To: Andrew Sheldon and Mark Johnson; City of Malibu

Cc: Bruce Hamamoto; Allen Ma; Alberto Grajeda; Kevin Chang; Antonino Monterrosa; Los Angeles County Department of Public Works

From: Tim Tringali; Jaime Sayre, PhD, P.E.; and Oliver Galang, P.E.

Date: December 14, 2018

Subject: **North Santa Monica Bay Coastal Watershed Management Group 2017-2018 Annual Report, Adaptive Management Process Summary**

1.0 INTRODUCTION AND BACKGROUND

The North Santa Monica Bay Coastal Watersheds (NSMBCW) area, located in the western portion of Los Angeles County, is largely undeveloped (93 percent [%] vacant land use), the majority of which is designated as natural open space presently owned by State Parks, SMMC, MRCA, the NPS, Los Angeles County, and the City of Malibu. The North Santa Monica Bay Coastal Watersheds Management Group (NSMBCW WMG) includes the City of Malibu (City), Los Angeles County (County), and Los Angeles County Flood Control District. Together, the NSMBCW WMG developed an Enhanced Watershed Management Program (EWMP) to comply with requirements in the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit (Permit). The NSMBCW EWMP allows collaboration among agencies on multi-benefit regional projects to retain both non-stormwater and stormwater runoff, as well as to facilitate flood control and increase water supply (Geosyntec Consultants 2016a).

The NSMBCW EWMP was developed to facilitate effective, watershed-specific Permit implementation strategies in accordance with Permit Part VI.C. It establishes water quality priorities, which provide the basis for prioritizing selection and scheduling of control measures for the EWMP; provides the program plan, including specific strategies, control measures and best management practices (BMPs) necessary to achieve water quality targets (Water Quality-Based Effluent Limitations [WQBELs] and Receiving Water Limitations [RWLs]); and describes the quantitative analyses completed to support target achievement and Permit compliance (Geosyntec Consultants, 2016a).

An *Assessment and Adaptive Management Framework* was included in the EWMP and is intended to define the triggers by which the EWMP is modified for greater effectiveness. Pursuant to the Permit, the adaptive management approach must be applied every two years from the date of program approval.

This adaptive management summary supplements the NSMBCW 2017-2018 Annual Report and was developed to address the approach specified in Section 8 of the NSMBCW EWMP, *Assessment and Adaptive Management Framework*, and in accordance with Order No. R4-2012-0175, NPDES Permit No. CAS004001, Permit Section VI.C.8.a.

2.0 ADAPTIVE MANAGEMENT PROCESS

The NSMBCW EWMP *Assessment and Adaptive Management Framework* is designed to address the requirements in Section VI.C.8.a.i of the Permit, specifically through evaluation and analyses of monitoring data collected through implementation of the NSMBCW Coordinated Integrated Monitoring Program (CIMP). These data will support adaptive management at multiple levels, including, but not limited to, tracking improvements in water quality over the course of EWMP implementation and generating data not previously available to support model updates. The NSMBCW EWMP *Assessment and Adaptive Management Framework* is also designed to consider the EWMP planning process and the relationship between monitoring, scheduling, and BMP planning. The adaptive management process outlines how the EWMP will be modified in response to monitoring results, updated modeling results, and lessons learned from BMP implementation (Geosyntec Consultants 2016a). It is designed to accomplish three goals:

1. Clarify the short-term and long-term commitments of the NSMBCW EWMP group within the EWMP.
2. Provide a structured decision-making process for modifications to the EWMP based on the results of monitoring data.
3. Propose a structure for evaluating compliance with water-quality based permit requirements within an adaptive structure.

If at any point during the implementation period, any of the Permit conditions are modified in response to a regulatory action, total maximum daily load (TMDL) modification, or local studies, the receiving water and outfall monitoring data will be compared to the new RWLs and WQBELs. The same procedure will be followed for evaluating the data and adapting the EWMP, but the new RWLs and WQBELs will be used for the analysis.

To demonstrate the aforementioned assessments and pursuant to Section VI.C.8.a.i of the Permit, the following evaluations are presented within this memorandum:

- Section 3.1, progress toward achieving interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachments L through R of the Permit, according to established compliance schedules;
- Section 3.2, progress toward achieving improved water quality in MS4 discharges and achieving receiving water limitations through implementation of the watershed control measures based on an evaluation of outfall-based monitoring data and receiving water monitoring data;
- Section 3.3, achievement of interim milestones;
- Section 3.4, re-evaluation of the water quality priorities identified for the WMA based on more recent water quality data for discharges from the MS4 and the receiving water(s) and a reassessment of sources of pollutants in MS4 discharges;
- Section 3.5, availability of new information and data from sources other than the Permittees' monitoring program(s) within the WMA that informs the effectiveness of the actions implemented by the Permittees;
- Section 3.6, Regional Water Board recommendations; and
- Section 3.7, recommendations for modifications to the Watershed Management Program solicited through a public participation process.

Finally, this memorandum presents additional reporting in Section 4 pursuant to Permit Section VI.C.8.a.iv and Section XVIII.A.6 of the Permit Monitoring and Reporting Program (MRP).

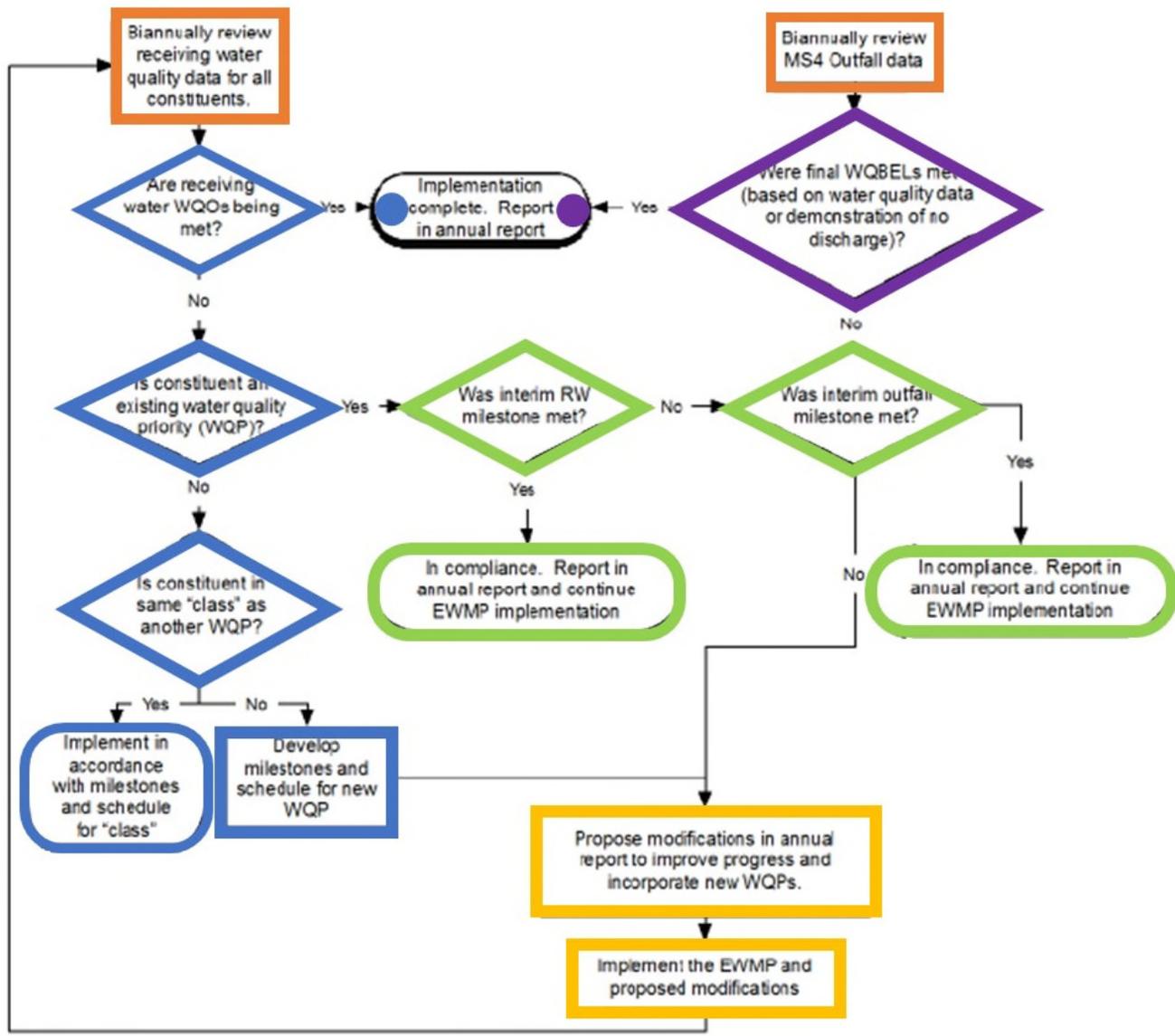


Figure 2-1. Adaptive Management Approach Flowchart

3.0 ADAPTIVE MANAGEMENT EVALUATIONS

3.1 PROGRESS TOWARD ACHIEVING WQBELS AND RWLS

Progress toward achieving interim and/or final WQBELS and/or RWLS, according to established compliance schedules was evaluated according to the *Adaptive Management Approach Flowchart* (i.e., decision tree) included as Figure 31 of the NSMBCW EWMP. Error! Reference source not found. within this memorandum is a representation of the decision tree included within the NSMBCW EWMP, graphically modified for the purposes of more easily communicating within this memorandum key outcomes at varying points throughout the decision tree. A complete summary of findings is presented in **Appendix A, Water Quality Objectives Compliance Evaluation, Tables A-1 and A-2.**

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Table 3-1 presents the priority water body-pollutant categories (WBPCs) defined by the NSMBCW EWMP and that were evaluated for progress toward achieving interim and/or final WQBELs and/or RWLs according to the decision tree presented in **Error! Reference source not found.** Based on the logic presented within **Figure 2-1**, constituents that did not meet water quality objectives or do not have applicable water quality objectives were further evaluated based on milestones as shown in Chapter 7 of the NSMBCW EWMP. Adapted versions of the compliance schedule and TMDL milestones are included within this memorandum as **Table 3-2** (Geosyntec Consultants 2016a). These compliance deadlines were established by their respective TMDL.

Table 3-1. Priority WBPCs

| Class | Constituent | Santa Monica Bay Shoreline | Trancas Canyon Creek | Malibu Creek | Topanga Canyon Creek | Malibu Lagoon | Santa Monica Bay |
|--|----------------------------|----------------------------|----------------------|--------------|----------------------|---------------|------------------|
| Category 1: TMDLs | | | | | | | |
| Pathogens | Coliform, Total | X | | | | X | |
| Pathogens | Coliform, Fecal | X | | | | X | |
| Pathogens | <i>Enterococcus</i> | X | | | | X | |
| Pathogens | <i>E. coli</i> | | | | | | |
| Trash/Debris | Trash/Debris | X | | X | | | X |
| Nutrients | Nitrate as N | | | X | | | |
| Nutrients | Nitrite as N | | | X | | | |
| Nutrients | TKN | | | X | | | |
| Nutrients | Nitrogen, Total | | | X | | | |
| Nutrients | Total Phosphorus | | | X | | | |
| Organics | DDT | | | | | | X |
| Organics | PCBs | | | | | | X |
| Category 2: 303(d) Listed | | | | | | | |
| Metals | Total & Dissolved Lead | | | | X | | |
| Metals | Total & Dissolved Selenium | | | X | | | |
| Salts | Sulfate | | | X | | | |
| Other | pH | | | | | X | |
| Category 3: No 303(d) Listing, RWL Exceedances and Potential Link to MS4 Discharges | | | | | | | |
| Pathogens | <i>E. coli</i> | | | | X | | |

Table 3-2. TMDL Compliance Dates and Load Reduction Requirements

| Water Body | Pollutant | Compliance Deadline |
|-------------------------|----------------------|---|
| SMB Beaches | Dry Weather Bacteria | July 15, 2006: Final summer RWLs (Allowable Exceedance Days [AEDs]) |
| | | November 1, 2009: Final winter RWLs (AEDs) |
| | Wet Weather Bacteria | July 15, 2009: 10% cumulative percentage reduction from total exceedance day reductions |
| | | July 15, 2013: 25% cumulative percentage reduction from total exceedance day reductions |
| | | July 15, 2018: 50% cumulative percentage reduction from total exceedance day reductions |
| | | July 15, 2021: Final RWLs (AEDs & Geometric Mean) |
| SMB | Trash/Debris | March 20, 2016: 20% reduction of baseline load |
| | | March 20, 2017: 40% reduction of baseline load |
| | | March 20, 2018: 60% reduction of baseline load |
| | | March 20, 2019: 80% reduction of baseline load |
| | | March 20, 2020: 100% reduction of baseline load |
| Malibu Creek and Lagoon | Dry Weather Bacteria | January 24, 2012: Final single sample AED RWLs met |
| | Wet Weather Bacteria | July 15, 2021: Final single sample AED and Geometric Mean RWLs |
| Malibu Creek | Trash | July 7, 2013: 20% reduction of baseline load |
| | | July 7, 2014: 40% reduction of baseline load |
| | | July 7, 2015: 60% reduction of baseline load |
| | | July 7, 2016: 80% reduction of baseline load |
| | | July 7, 2017: 100% reduction of baseline load |

3.1.1 Progress Toward Achieving Water Quality Objectives – Trancas Canyon Creek (NSMBCW-RW1)

The NSMBCW EWMP does not prioritize any WBPCs for Trancas Canyon Creek; however, the NSMBCW CIMP includes monitoring for a variety of constituents at this water body (Geosyntec Consultants 2016b). Refer to **Section 3.4, Reevaluation of Water Quality Priorities**, of this memorandum for a discussion of whether results for constituents monitored at Trancas Canyon Creek indicate a need to establish new WBPCs for Trancas Canyon Creek.

3.1.2 Progress Toward Achieving Water Quality Objectives – Malibu Creek and Lagoon

As presented in **Table 3-3**, eight priority constituents are monitored for at Malibu Creek (CIMP Station ID NSMBCW-RW2). Each of these priority constituents has a corresponding wet weather RWL, all of which were met since the inception of implementing the CIMP. All eight priority constituents have a corresponding dry weather RWL, of which seven met RWLs (nitrate, nitrite, total Kjeldahl nitrogen, total phosphorus, total selenium, and dissolved selenium). Further discussion regarding achievement of interim receiving water and outfall milestones is presented in

Section 3.3. Appendix A, Tables A-1 and A-2 present the full water quality objective compliance evaluation performed in accordance with **Figure 2-1** and the *Assessment and Adaptive Management Framework* outlined in Section 8 of the NSMBCW EWMP.

Table 3-3. Progress Toward Achieving Receiving Water Limitations – Malibu Creek

| Constituent | Event Type (Wet/Dry) | Is the WQO being met? | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|----------------------------------|----------------------|-----------------------|---|---|
| Category 1: TMDLs | | | | |
| Nitrate as N | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Nitrite as N | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Nitrogen, Total Kjeldahl | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Nitrogen, Total | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Total Phosphorus | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Category 2: 303(d) Listed | | | | |
| Total Selenium | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Dissolved Selenium | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Sulfate | Wet | Yes | - | - |
| | Dry | No | Yes, refer to Section 7.1.2.4 of the NSMBCW EWMP | - |

Notes:

- Addressing this question/step in the *Adaptive Management Approach Flowchart* (Figure 2-1) is unnecessary based on responses to prior questions/steps.

As presented in **Table 3-4**, eight priority constituents are monitored during wet weather at the Malibu Creek Outfall (CIMP Station ID NSMBCW-O2). All eight constituents have corresponding wet weather WQBELs, all of which have been met since the inception of implementing the NSMBCW CIMP.

Table 3-4. Progress Toward Achieving Receiving Water Limitations – Malibu Creek Outfall

| Constituent | Event Type (Wet/Dry) | Was the final WQBEL met? | Was the interim outfall milestone met? |
|----------------------------------|----------------------|--------------------------|--|
| Category 1: TMDLs | | | |
| Nitrate as N | Wet | Yes. No flow observed. | - |
| Nitrite as N | Wet | Yes. No flow observed. | - |
| Nitrogen, Total Kjeldahl | Wet | Yes. No flow observed. | - |
| Nitrogen, Total | Wet | Yes. No flow observed. | - |
| Total Phosphorus | Wet | Yes. No flow observed. | - |
| Category 2: 303(d) Listed | | | |
| Total Selenium | Wet | Yes. No flow observed. | - |
| Dissolved Selenium | Wet | Yes. No flow observed. | - |
| Sulfate | Wet | Yes. No flow observed. | - |

Notes:

- Addressing this question/step in the *Adaptive Management Approach Flowchart* (Figure 2-1) is unnecessary based on responses to prior questions/steps.

Pursuant to the *Malibu Creek and Lagoon Bacteria TMDL* (Los Angeles Regional Water Quality Control Board [LARWQCB] 2006), three indicator bacteria (total coliform, fecal coliform, and *Enterococcus*) are monitored for at Malibu Creek Lagoon (CIMP Station ID MCW-1), all of which have a corresponding wet and dry weather RWL (**Table 3-5**). For both dry and wet weather conditions, RWLs were exceeded. Further discussion of achievement of interim milestones is presented in **Section** Error! Reference source not found.. **Appendix A, Tables A-1 and A-2** present the full water quality objective compliance evaluation performed in accordance with **Figure 2-1** and the *Assessment and Adaptive Management Framework* outlined in Section 8 of the NSMBCW EWMP.

Table 3-5. Progress Toward Achieving Receiving Water Limitations – Malibu Lagoon

| Constituent | Event Type (Wet/Dry) | Is the WQO being met for all samples?* | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|--------------------------|----------------------|--|---|---|
| Category 1: TMDLs | | | | |
| Coliform, Total | Wet | No | Yes | - |
| | Dry | No | Yes | - |
| Coliform, Fecal | Wet | No | Yes | - |
| | Dry | No | Yes | - |
| <i>Enterococcus</i> | Wet | No | Yes | - |
| | Dry | No | Yes | - |

| Constituent | Event Type (Wet/Dry) | Is the WQO being met for all samples?* | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|----------------------------------|----------------------|--|---|---|
| Category 2: 303(d) Listed | | | | |
| pH | Wet | Yes | N/A | - |
| | Dry | No | N/A | - |

Notes:

- Addressing this question/step in the *Adaptive Management Approach Flowchart* (Figure 2-1) is unnecessary based on responses to prior questions/steps.
- N/A no interim receiving water milestone listed in EWMP.
- * WQO for pathogens are the single-sample limits defined in the Bacteria TMDL.

Pursuant to the *Malibu Creek Watershed Trash Total Maximum Daily Load* (LARWQCB 2009), trash is monitored for at two locations in Malibu Creek near Cross Creek Road and Malibu Country Mart. The Compliance Monitoring Site (CMS_ML_1), adjacent to upper Malibu Lagoon, is monitored bi-monthly; whereas the General Assessment Site (GMS_ML_1), adjacent to the west/upcoast bank of Malibu Lagoon just north of the bridge on Pacific Coast Highway, is monitored twice a year. The dry weather RWL (zero) and wet weather RWL (zero) are not being met at the CMS_ML_1 location (**Table 3-6**). Further discussion of achievement of interim milestones is presented in **Section Error! Reference source not found.. Appendix A, Tables A-1 and A-2** present the full water quality objective compliance evaluation performed in accordance with **Figure 2-1** and the *Assessment and Adaptive Management Framework* outlined in Section 8 of the NSMBCW EWMP.

Table 3-6. Progress Toward Achieving Receiving Water Limitations – CMS_ML_1

| Constituent | Event Type (Wet/Dry) | Is the WQO being met? | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|----------------------------|----------------------|-----------------------|---|---|
| CMS_ML_1 | | | | |
| Priority 1 (TMDLs): | | | | |
| Trash | Wet | No | No | Yes ¹ |
| | Dry | No | No | Yes ¹ |

Notes:

- 1 Within the boundaries of the NSMBCW and Malibu Creek Watershed, all City and County MS4s tributary to Malibu Creek and Lagoon are diverted to the Civic Center Stormwater Treatment Facility and Legacy Park. All dry weather flows and all wet weather flows for storms up to the 85th percentile, 24-hour depth, are captured, treated, retained, and reused; therefore, outfalls to Malibu Creek are in compliance with the interim milestone.

3.1.3 Progress Toward Achieving Water Quality Objectives – Topanga Canyon Creek

As presented in **Table 3-**, three priority constituents are monitored for at Topanga Canyon Creek (CIMP Station ID NSMBCW-RW3), all of which have a corresponding wet and dry weather RWL. Two of these constituents met both dry and wet weather RWLs (total lead and dissolved lead); however, *E. coli* did not. Further discussion of progress toward achieving interim milestones is presented in **Section 3.3. Appendix A, Tables A-1 and A-2** present the full water quality objective compliance evaluation performed in accordance with **Figure 2-1** and the *Assessment and Adaptive Management Framework* outlined in Section 8 of the NSMBCW EWMP.

Table 3-7. Progress Toward Achieving Receiving Water Limitations – Topanga Canyon Creek

| Constituent | Event Type (Wet/Dry) | Is the WQO being met for all samples?* | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|--|----------------------|--|---|---|
| Category 2: 303(d) Listed | | | | |
| Total Lead | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Dissolved Lead | Wet | Yes | - | - |
| | Dry | Yes | - | - |
| Category 3: No 303(d) Listing, RWL Exceedances and Potential Link to MS4 Discharges | | | | |
| <i>E. coli</i> | Wet | No | Yes; See section 7.2.1 in EWMP | - |
| | Dry | No | Yes; See section 7.2.1 in EWMP | - |

Notes:

- Addressing this question/step in the *Adaptive Management Approach Flowchart* (Figure 2-1) is unnecessary based on responses to prior questions/steps.
- * WQO for pathogens are the single-sample limits defined in the Bacteria TMDL.

3.1.4 Progress Toward Achieving Water Quality Objectives – Santa Monica Bay

Pursuant to the Santa Monica Bay Beaches Bacteria TMDL (LARWQCB 2003), fecal coliform (analyzed using *E. coli* data), *Enterococcus*, and total coliform water sampling data were collected by the City of Los Angeles (EMS) and the Los Angeles County Department of Public Health under the Santa Monica Bay Beaches Coordinated Shoreline Monitoring Program (SMBB CSMP). Monitoring was not conducted at SMB-1-02 due to unsafe monitoring conditions (eroding and unstable terrain) throughout the monitoring year. The majority of receiving water sites were sampled weekly (n=52); however, two sites (SMB-1-18 and SMB-MC-2) were sampled daily (n=259 and n=260, respectively). *E. coli* samples were collected to indicate fecal coliform concentrations while *Enterococcus* and total coliform matched their prescribed analytical requirements. Sample data was compiled and compared to the applicable WQOs defined in the SMBB Bacteria TMDL. For Jurisdictional Group 1, all RWLs were exceeded at least once (see Section 6 of the WMG’s Annual Report, Watershed Form, Reporting Year 17-18 for additional details). For Jurisdictional Group 4 (SMB 4-1), wet weather *Enterococcus* exceeded the WQO at least once during the monitoring year; however, it met the RWLs for all other pathogens.

Table 3-8. Progress Toward Achieving Receiving Water Limitations – Santa Monica Bay

| Constituent | Event Type (Wet/Dry) | Is the WQO being met for all samples?* | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|-------------------------------|----------------------|--|---|---|
| Jurisdictional Group 1 | | | | |
| Category 1: TMDLs | | | | |
| Coliform, Total | Wet | No | Yes | - |
| | Dry | No | Yes | - |
| Coliform, Fecal | Wet | No | Yes | - |
| | Dry | No | Yes | - |

| Constituent | Event Type (Wet/Dry) | Is the WQO being met for all samples?* | Were the respective receiving water interim milestones met? | Were the respective outfall interim milestones met? |
|-------------------------------|----------------------|--|---|---|
| <i>Enterococcus</i> | Wet | No | Yes | - |
| | Dry | No | Yes | - |
| Jurisdictional Group 4 | | | | |
| Category 1: TMDLs | | | | |
| Coliform, Total | Wet | Yes | Yes | - |
| | Dry | Yes | Yes | - |
| Coliform, Fecal | Wet | Yes | Yes | - |
| | Dry | Yes | Yes | - |
| <i>Enterococcus</i> | Wet | No | Yes | - |
| | Dry | Yes | Yes | - |

Notes:

- Addressing this question/step in the *Adaptive Management Approach Flowchart* (Figure 2-1) is unnecessary based on responses to prior questions/steps.
- * WQO for pathogens are the single-sample limits defined in the Bacteria TMDL.

Per the Santa Monica Bay TMDL for DDT and PCBs, additional stormwater monitoring is necessary to better determine the loadings and sources of DDT and PCBs (USEPA 2012). The TMDL also suggests that sufficiently sensitive analytical methods be used (e.g., Method 1668) to analyze sample. As described in the CIMP, NSMBCW-RW1 (Trancas Creek) and NSMBCW-O1 (Trancas Creek Outfall) were chosen to monitor for DDT and PCBs in the NSMBCW, because they best reflect MS4 discharges from representative land uses in the CIMP area (Geosyntec Consultants 2016b). During the 2017-2018 reporting year, wet weather samples collected for PCBs and DDTs were analyzed using EPA Method 1668C and 1699, respectively. These analytical methods are the most sensitive EPA-approved analytical methods commercially available in the region. Sampling results from NSMBCW-RW1 (Trancas Creek) and NSMBCW-O1 (Trancas Creek Outfall) for the 2017-2018 reporting year represent the first year of high resolution data needed to calculate a three-year average. Therefore, two additional years of high resolution data are needed before any comparison can be made.

The WMG is also subject to the Santa Monica Bay Nearshore and Offshore Debris TMDLs (the SMB Debris TMDLs) (LARWQCB 2012). The TMDL implementation schedule requires a 20 percent progressive reduction of the trash baseline load each year, starting four years (2016) after the establishment of the TMDL and until the numeric target of zero trash is achieved (2020). Since the County of Los Angeles and the City of Malibu both had ordinances adopted prior to November 4, 2013, which ban plastic bags, smoking in public places, and single use expanded polystyrene food packaging, the final compliance date is March 20, 2023.

The County's strategy for compliance with the SMB Debris TMDLs includes a phased retrofit of all catch basins throughout the NSMBCW (refer to the County's Annual Report, Individual Form, Reporting Year 17-18, Attachment 8.1, Exhibit 2, for additional details). Its strategy for compliance with the LA includes implementation of a MFAC/BMP program. Pursuant to the Monitoring and Reporting requirements of the SMB Debris TMDLs and the Permit MRP, the County of Los Angeles submitted a TMRP to the LARWQCB before the TMDL-specified deadline of September 20, 2012. The County's TMRP addresses monitoring for both point (i.e., WLA) and non-point source (i.e., LA) trash in the Unincorporated County Areas, and on beaches and harbors owned and operated by the County. The County received a letter from the LARWQCB on May 30, 2014, approving the TMRP. The letter also stated that the TMRP developed by the County of Los Angeles for the Malibu Creek Trash TMDLs fulfills the requirement to prepare and implement a TMRP.

The City of Malibu is subject to the WLA of the SMB Debris TMDLs; however, the City is also subject to the requirements of the Malibu Creek Trash TMDLs. The SMB Debris TMDL states that monitoring and reporting requirements within the Malibu Creek Trash TMDLs fulfill the requirement to prepare and implement a separate TMRP. This fact was confirmed in a letter from the LARWQCB to the City, dated October 20, 2014, which stated the City did not need to submit a separate TMRP for the SMB Debris TMDLs. Therefore, compliance with the monitoring and reporting requirements of the Malibu Creek Trash TMDLs constitutes compliance with the requirements of the SMB Debris TMDL. Additionally, the City of Malibu submitted a request to the LARWQCB on September 19, 2013, to be exempt from the SMB Debris TMDLs requirement to conduct monitoring for plastic pellets. This request was based on the fact the City has no industrial facilities or activities related to the manufacturing, handling, or transportation of plastic pellets within its jurisdiction, and has limited commercial and/or industrial transportation corridors related to such activities. The City’s request was granted within the letter dated October 20, 2014, therefore, no monitoring for plastic pellets is being performed by the Watershed Management Group. The City currently sweeps all street at a minimum of monthly to prevent trash from accumulating in deleterious amounts. The City is also in the process of installing trash screens in high priority land use areas.

3.2 PROGRESS TOWARD IMPROVING WATER QUALITY THROUGH IMPLEMENTATION OF WATERSHED CONTROL MEASURES

Per the milestone schedule set forth in **Table 3-9**, adapted from Table 37 of the NSMBCW EWMP, the WMG committed to completing trash full capture system installation by 2020, and regional and distributed (i.e., green street) projects by 2021. Compliance with the Santa Monica Bay Beaches Bacteria TMDL (2021 final milestone) is driving the implementation of the stormwater control measures throughout the watershed (Geosyntec Consultants 2016a).

Table 3-9. Implementation Schedule for NSMBCW EWMP BMPs

| BMP Name/Location | Planning Phase | Design Phase | Construction Phase |
|---|----------------|--------------|--------------------|
| Full Capture System Installation | | | 2016-2020 |
| Public Retrofit Incentives | | | 2016-2021 |
| Topanga Canyon (S1-18) Regional Project | 2016-2017 | 2018-2019 | 2020-2021 |
| Ramirez Canyon (E1-07) Distributed | 2017 | 2018-2019 | 2020-2021 |
| Latigo Canyon (S1-09) Distributed | 2017 | 2018-2019 | 2020-2021 |
| Corral Canyon (E1-11) Distributed | 2018 | 2019 | 2020-2021 |
| Marie Canyon (S1-12) Distributed* | 2016-2017 | 2018-2019 | 2020-2021 |
| Winter Canyon (E1-12) Distributed | 2016-2017 | 2018-2019 | 2020-2021 |
| Sweetwater Canyon (S1-13) Distributed | 2018 | 2019 | 2020-2021 |
| Las Flores Canyon (W1-14) Distributed | 2018 | 2019 | 2020-2021 |
| Las Flores Canyon (S1-14) Distributed | 2018 | 2019 | 2020-2021 |

Notes:

- * Pending LARWQCB approval of the EWMP modification that Pepperdine University be removed from the LA County North Santa Monica Bay Watershed Area, the EWMP will be modified to remove the Marie Canyon Distributed BMP

The City has implemented three new/redevelopment projects that treat 2.36 acres and achieve 0.06 ac-ft of total BMP capacity. The County has implemented one new/redevelopment project in the WMA that treats 6.3 acres and achieves 0.33 ac-ft of total BMP capacity. The NSMBCW WMG has achieved a total BMP capacity of 0.39 ac-ft. Refer to Section 2.2, Table 2b of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18 for additional details.

Since the effective date of the Permit (December 28, 2012), the NSMBCW WMG have implemented 19 new development and redevelopment projects (NSMBCW Annual Report, Watershed Form, Reporting Year 17-18, Table 2b). These projects treat over 62.12 acres and provide 0.55 ac-ft of BMP retention capacity. **Section 4.1** of this memorandum summarizes the on-the-ground structural control measures implemented to date (refer to Section 2 of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18 for additional details on the structural control measures implemented since December 28, 2012 and during the 17-18 reporting year.) **Section 4.2** summarizes the non-structural control measures completed to date (refer to Section 5 of the NSMBCW Annual Report, Individual Forms for the City of Malibu and County of Los Angeles, Reporting Year 17-18, for additional details.)

The 2017-2018 monitoring year was the second year of CIMP implementation; therefore, there is insufficient data to conduct meaningful trend analyses to determine whether stormwater discharges at designated outfalls is improving, staying the same, or declining, under wet and dry weather conditions. Once sufficient data is collected (i.e., approximately three to five years of data for existing monitoring stations) and there is greater implementation of stormwater control measures, a trend analysis will be conducted. As stated above, the Santa Monica Bay Beaches Bacteria TMDL (2021 final milestone) is driving the implementation of stormwater control measures throughout the watershed. Given this compliance milestone, the NSMBCW WMG has three (3) years to fully implement the control measures presented in **Table 3-9**. Upon full implementation of the NSMBCW EWMP, the NSMBCW WMG will reanalyze and evaluate if modifications or changes to control measures are necessary.

3.3 ACHIEVEMENT OF INTERIM MILESTONES

According to **Figure 2-1**, where receiving water objectives are being met, no further analysis is required. However, where receiving water objectives are not being met, an assessment of receiving water quality conditions relative to the *interim* receiving water milestones are necessary. Similarly, where final WQBELs for an outfall are not met, an assessment of outfall water quality conditions relative to *interim* outfall milestones is necessary (interim milestones for outfalls were not identified in the NSMBCW EWMP). The NSMBCW CIMP monitoring data and Santa Monica Bay Beaches TMDL data were compared to the interim milestones defined in the NSMBCW EWMP (**Error! Reference source not found.**, adapted from Section 7 and Table 35 from the NSMBCW EWMP). Results of this assessment are presented in **Tables 3-3** through **3-8**. **Appendix A, Tables A-1** and **A-2** present the full water quality objective compliance evaluation performed in accordance with **Figure 2-1** and the *Assessment and Adaptive Management Framework* outlined in Section 8 of the NSMBCW EWMP.

3.3.1 Achievement of the Santa Monica Bay Beaches Bacteria Interim Milestone

As noted above, compliance with the Santa Monica Bay Beaches Bacteria TMDL (2021 final milestone) is driving the implementation of the stormwater control measures throughout the watershed. Per the NSMBCW EWMP (Section 7.2.1), the only interim milestone for the TMDL is a 50 percent reduction in total wet weather exceedance days by July 15, 2018. The interim milestones are presented as combined exceedance days per Jurisdictional Group that can occur beyond those allowed during wet weather (Permit Attachment M) (Geosyntec Consultants

2016a). Based on historical monitoring data, Jurisdictional Group 1 (JG-1) compliance monitoring locations have had fewer than 511 exceedance days every year beginning in 2007. Jurisdictional Group 4 (SMB 4-1) has had fewer than 22 exceedance days every year beginning in 2005 (Table 36 of the NSMBCW EWMP [Geosyntec Consultants 2016a]); therefore, the interim milestone for maximum wet weather exceedance days (511 and 22, respectively) had been achieved.

- JG-1 sites – final receiving water limitations of 293 wet weather exceedance days; therefore, a total of 511 wet weather exceedance days must be met to achieve the 50 percent reduction milestone by July 15, 2018.
 - For calendar year 2016, the total exceedance days were 210; therefore, the final receiving water limitation of 293 wet weather exceedance days is being achieved.
 - For calendar year 2017, the total exceedance days were 252; therefore, the final receiving water limitation of 293 wet weather exceedance days is being achieved.
- JG-4 sites (SMB 4-1) – final receiving water limitations of 14 wet weather exceedance days; therefore, a total of 22 wet weather exceedance days must be met to achieve the 50 percent reduction milestone by July 15, 2018.
 - For calendar year 2016, the total exceedance days were 7; therefore, the final receiving water limitation of 14 wet weather exceedance days is being achieved.
 - For calendar year 2017, the total exceedance days were 0; therefore, the final receiving water limitation of 14 wet weather exceedance days is being achieved.

3.3.2 Achievement of the Malibu Creek Trash Interim Milestone

Table 3-2 presents the compliance deadlines for which TMDLs the WMG is subject. Per Table 3-2, the final compliance deadline for the Malibu Creek Trash TMDL is July 2017; therefore, the City constructed both the Civic Center Stormwater Treatment Facility and Legacy Park in 2006 and 2010, respectively. These projects capture runoff from a 337-acre subwatershed (a portion of the Malibu Creek Watershed), that would normally discharge to lower Malibu Creek and Lagoon and divert and treat it for reuse. Only in extreme circumstances, where flows exceed the capacity of the detention pond or diversion structures and systems associated with the Civic Center Stormwater Treatment Facility, would there be a discharge from the Civic Center Drain to Malibu Creek and Lagoon. Refer to Section 6 of the WMG's Annual Report, Watershed Form, for Reporting Year 17-18, for more details.

Compliance Monitoring Sites (CMS) are specific locations within listed waterbodies. CMS_ML_1 was selected for its proximity to the only major MS4 outfall in the Malibu Creek Watershed within the City of Malibu and to determine effectiveness of the BMPs installed. General Assessment Sites (GAS) are monitoring locations chosen to further identify high trash generating areas and supplement the information gathered at the CMS. GAS_ML_1 was chosen as a site not near an outfall and due to its proximity to Malibu Lagoon and a shopping plaza. These two sites have been monitored from December 22, 2014 until present.

Refer to the County's Annual Report, Individual Form, Reporting Year 17-18, Attachment 8.1, Exhibit 2, for a summary of the County's progress toward interim and final milestones.

3.3.3 Achievement of the Santa Monica Bay Nearshore and Offshore Debris Interim Milestone

Pursuant to the NSMBCW EWMP (Geosyntec Consultants 2016a), compliance with the Santa Monica Bay Nearshore and Offshore Debris TMDL will be met through a phased retrofit of all catch basins throughout the NSMBCW EWMP Area to meet each interim compliance deadline (60% load reduction by 2018) as well as the final compliance deadline (100% load reduction) in 2020. As previously noted and summarized within Section 6 of the WMG's Annual Report, Watershed Form, for Reporting Year 17-18, the City of Malibu is subject to the WLA of the SMB Debris TMDLs; however, the City is also subject to the requirements of the Malibu Creek Trash TMDLs. The

SMB Debris TMDL states that monitoring and reporting requirements within the Malibu Creek Trash TMDLs fulfill the requirement to prepare and implement a separate TMRP. All City and County MS4s in the area tributary to Malibu Creek and Lagoon and within the EWMP area are diverted to the Civic Center Stormwater Treatment Facility and Legacy Park. Since trash full capture devices were included in the construction of the Civic Center Stormwater Treatment Facility and Legacy Park projects, the WMG has achieved compliance with the SMB Debris TMDL WLA within the Malibu Creek subwatershed and is achieving the interim milestone for percent reduction of trash load. The City currently sweeps all streets a minimum of monthly to prevent trash from discharging to receiving waters. The City is currently in the process of installing trash screens in high priority land use areas. Refer to the County's Annual Report, Individual Form, Reporting Year 17-18, Attachment 8.1, Exhibit 2, for a summary of the County's progress toward interim and final milestones.

3.3.4 Achievement of the Malibu Creek and Lagoon Bacteria Interim Milestone

Per **Table 3-2** and Section 7 of the NSMBCW EWMP, the Malibu Creek and Lagoon Bacteria compliance deadline for achieving the final single sample Allowable Exceedance Days (AED) and Geometric Mean RWLs is July 15, 2021. An interim milestone for bacteria in Malibu Creek and Lagoon has not been established; therefore, progress toward achieving an interim milestone could not be determined.

3.4 REEVALUATION OF WATER QUALITY PRIORITIES

Section VI.C.8.a.i. of the permit suggests the adaptive management process consider the following:

Re-evaluation of the water quality priorities identified for the WMA based on more recent water quality data for discharges from the MS4 and the receiving water(s) and a reassessment of sources of pollutants in MS4 discharges

Accordingly, the four-step process highlighted in Section VI.C. of the Permit and bulleted below was applied to confirm the validity of existing priorities and determine whether any changes are necessary:

- A water quality characterization (VI.C.5.a.i, pg. 58) based on available monitoring data, TMDLs, 303(d) lists, storm water annual reports, etc.;
- A water body-pollutant classification (VI.C.5.a.i, pg. 59), to identify water body-pollutant combinations that fall into three Permit defined categories;
- A source assessment (VI.C.5.a.i, pg. 59) for the water body-pollutant combinations in the three categories; and
- Prioritization of the water body-pollutant combinations (VI.C.5.a.i, pg. 60).

The following Sections in this memorandum briefly summarize the findings of this four-step prioritization process based upon available data.

3.4.1 Water Quality Characterization

Water-quality conditions were re-evaluated based upon new water quality data obtained via implementation of the NSMBCW CIMP. The characterization process consisted of the following steps:

- Compiling relevant NSMBCW CIMP data and information;
- Validating the EWMP area and the water bodies within and downstream of the area that might be influenced by discharges from the EWMP area; and

- Analyzing the data to identify constituents not meeting WQOs.

Table 3-10 summarizes water bodies and constituents monitored pursuant to the NSMBCW CIMP that did not meet pertinent WQOs during one or more events and are not currently deemed a priority within the NSMBCW EWMP.

Table 3-10 WBPCs Not Meeting WQOs and Not Currently a Priority within the NSMBCW EWMP

| Water Body | Constituent |
|----------------------|-------------------------------------|
| Trancas Canyon Creek | Dissolved Oxygen ¹ |
| | pH ¹ |
| | <i>E. coli</i> |
| | Dissolved Copper ¹ |
| Malibu Creek | Dissolved Oxygen ¹ |
| | pH ¹ |
| | Water Temperature ¹ |
| | <i>E. coli</i> ¹ |
| | Total Dissolved Solids ¹ |
| | Chloride ¹ |
| Topanga Canyon Creek | Dissolved Oxygen ¹ |
| | pH ¹ |
| | <i>E. coli</i> ¹ |

Note:

- Given that the paired outfall met the pertinent WQBEL, it is unlikely that the MS4 is contributing to RWL not being met.

3.4.2 Water Body-Pollutant Classification

Based on the original water quality characterization included in the NSMBCW EWMP, WBPCs were classified into one of three categories, in accordance with Section IV.C.5(a).ii of the Permit. This categorization is intended to prioritize WBPCs and guide the implementation of structural and institutional BMPs. **Figure 3-1** presents a brief conceptual overview of the process used to identify and categorize WBPCs within the NSMBCW EWMP Area (adapted from Figure 3 of the NSMBCW EWMP [Geosyntec Consultants 2016a]).

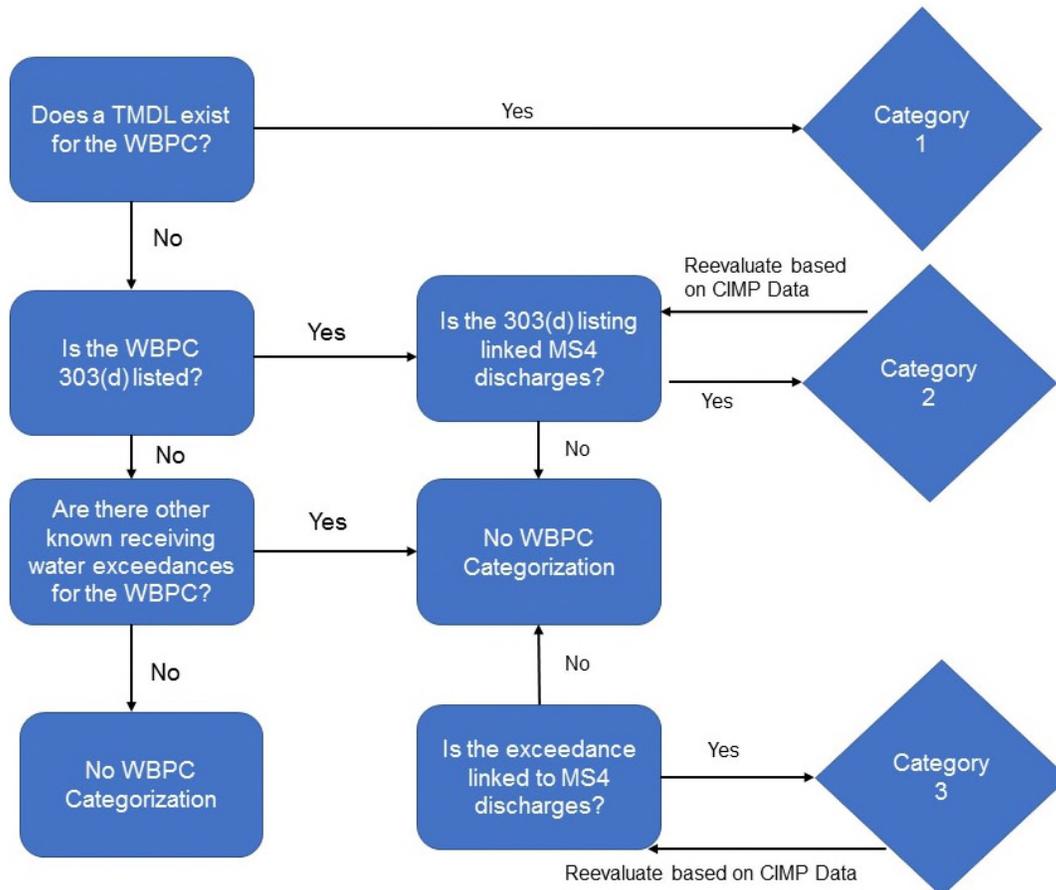


Figure 3-1. Process for Categorizing Water Body Pollutant Combinations

A description of the three categories is summarized below:

- Category 1 (Highest Priority): Water body-pollutant combinations for which water quality-based effluent limitations and/or receiving water limitations are established in Part VI.E and Attachments L through R of the Permit.
- Category 2 (High Priority): Pollutants for which data indicate water quality impairment in the receiving water according to the *State's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (State Listing Policy) and for which MS4 discharges may be causing or contributing to the impairment.
- Category 3 (Medium Priority): Pollutants for which there are insufficient data to indicate water quality impairment in the receiving water according to the State's Listing Policy, but which exceed applicable

receiving water limitations contained in the Permit and for which MS4 discharges may be causing or contributing to the exceedance.

Prior WBPC categorization was assessed for potential changes. The following sections summarize the findings of this assessment.

3.4.2.1 Category 1 – Highest Priority

Category 1 WBPCs are those where WQBELs and/or RWLs have been established in an approved TMDL. Table 8 of the NSMBCW EWMP summarizes eight Category 1 WBPCs identified at the time of EWMP preparation (Geosyntec Consultants, 2016a). The accuracy and completeness of this list of Category 1 WBPCs was evaluated relative to the State Water Resources Control Board's (SWRCB) 2014 and 2016 California Integrated Report Clean Water Act Sections 303(d) and 305(b) (2016 California Integrated Report) (2017). It was determined there are no changes to the number or type of TMDLs applicable to the NSMBCW WMA; however, there were several updates to existing TMDLs, which are discussed in Section 6 of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18.

3.4.2.2 Category 2 – High Priority

Category 2 WBPCs include pollutants for which data indicate water quality impairment in the receiving water according to the State Listing Policy and where MS4 discharges may be causing or contributing to the impairment. Table 8 of the NSMBCW EWMP summarizes three Category 2 WBPCs identified at the time of EWMP preparation (Geosyntec Consultants 2016a). The accuracy and completeness of this list of Category 2 WBPCs was evaluated relative to the 2016 California Integrated Report. No new 303(d) listings or delistings were identified.

3.4.2.3 Category 3 – Medium Priority

Category 3 WBPCs include pollutants which don't meet applicable RWLs contained in the Permit and for which MS4 discharges may be causing or contributing to the exceedances, but which do not have an approved TMDL or are not listed on the 303(d) list. Table 8 of the NSMBCW EWMP summarizes one Category 3 WBPC identified at the time of EWMP preparation (Geosyntec Consultants 2016a). The accuracy and completeness of this pollutant categorization was evaluated relative to newly obtained water quality data produced by the NSMBCW CIMP.

As noted in Section 3.4.1 and Table 3-10 of this memorandum, several pollutants being monitored pursuant to the NSMBCW CIMP did not meet pertinent RWLs; however, for many of these pollutants, the results of corresponding outfall monitoring, indicate the NSMBCW MS4 is not likely to be causing for contributing any receiving water problem. Based on this analysis, E.coli could be a potential new Category 3 WBPC for Trancas Canyon Creek due to exceedances in both the receiving water and the paired outfall; however, the 2017-2018 monitoring year was the second year of CIMP implementation. Therefore, there is insufficient data to conduct a meaningful analysis to determine whether the MS4 is contributing to the exceedance of the RWL. Once sufficient data is collected (i.e., approximately three to five years of data for existing monitoring stations), a more rigorous water-body pollutant classification analysis will be conducted. The NSMBCW WMG will continue to monitor for E.coli at Trancas Canyon Creek and its paired outfall, pursuant to the NSMBCW CIMP, and will adhere to the protocols identified in the Section VI.C.2.a.iii of the Permit.

3.4.3 Source Assessment

The preliminary source assessment and literature review conducted presented in Section 4.4 of the NSMBCW EWMP was evaluated based on any new information or data available. No new information related to potential sources within the watershed for the water body-pollutant combinations was found. Table 4-6 in the NSMBCW EWMP presents the source assessment for the NSMBCW WMA. The final source assessment will be conducted using available data and information from annual reports, established TMDLs, and information received from the EWMP agencies.

3.4.4 Prioritization of the Water Body-Pollutant Combinations

Based upon a re-evaluation of water quality priorities identified for the NSMBCW WMA using more recent water quality data and a reassessment of sources of pollutants in MS4 discharges, one new Category 3 WBPC was identified (i.e., *E. coli* in Trancas Canyon Creek). **Table 3-11** presents a summary of current WBPCs identified for the NSMBCW WMA.

Table 3-11. Water Body Pollutant Prioritization for the NSMBCW EWMP Area

| Category | Water Body | Pollutant | Change From 2016 EWMP |
|----------|--------------------------|-----------------------------|-----------------------|
| 1 | Malibu Creek and Lagoon | Nutrients | No change |
| | Santa Monica Bay Beaches | Dry Weather Bacteria | No change |
| | | Wet Weather Bacteria | No change |
| | Malibu Creek and Lagoon | Indicator Bacteria | No change |
| | Malibu Creek | Trash | No change |
| | Santa Monica Bay | Trash/Debris | No change |
| | | DDTs | No change |
| PCBs | | No change | |
| 2 | Topanga Canyon Creek | Lead | No change |
| | Malibu Creek | Sulfates & Selenium | No change |
| | Malibu Lagoon | pH | No change |
| 3 | Topanga Canyon Creek | Bacteria (<i>E. coli</i>) | No change |

3.5 NEW INFORMATION AND DATA

Section VI.C.8.a.i. of the Permit Section VI.C.8.a.i. suggests that the adaptive management process consider the following:

Availability of new information and data from sources other than the Permittees' monitoring program(s) within the WMA that informs the effectiveness of the actions implemented by the Permittee.

At this time, there is no new information or data relevant to the WMA that would help the NSMBCW WMG better understand the effectiveness of its actions or implemented watershed control measures.

3.6 RECOMMENDATIONS FROM THE REGIONAL WATER QUALITY CONTROL BOARD

Section VI.C.8.a.i. of the Permit suggests the adaptive management process consider the following:

Regional Water Board recommendations.

At this time, the NSMBCW WMG has not received any recommendations or comments from the LARWQCB regarding EWMP implementation.

3.7 RECOMMENDATIONS FROM PUBLIC REVIEW AND COMMENT

Section VI.C.8.a.i. of the Permit suggests the adaptive management process consider the following:

Recommendations for modifications to the Watershed Management Program solicited through a public participation process.

At this time, the NSMBCW WMG has not received any recommendations or comments from the public.

4.0 ADDITIONAL ADAPTIVE MANAGEMENT REPORTING

Pursuant to the Permit Section VI.C.8.a.iv and Section XVIII.A.6 of the Permit MRP, this Section summarizes the following information:

- On-the-ground structural control measures completed;
- Non-structural control measures completed;
- Monitoring data that evaluates the effectiveness of implemented control measures in improving water quality;
- Comparison of the effectiveness of the control measures to the results projected by the RAA;
- Comparison of control measures completed to date with control projected by the RAA;
- Comparison of control measures completed to date with control measures projected to be completed to date pursuant to the EWMP;
- Control measures proposed to be completed in the next two years pursuant to the EWMP and the schedule for completion of those control measures; and
- Status of funding and implementation for control measures proposed to be completed in the next two years.

4.1 ON-THE-GROUND STRUCTURAL CONTROL MEASURES COMPLETED

Since the effective date of the Permit (i.e., December 28, 2012) the WMG has implemented 19 new and redevelopment projects (WMG's Annual Report, Watershed Form, Reporting Year 17-18, Table 2b). These projects treat greater than 62.12 acres and provide 0.55 ac-ft of BMP retention capacity.

The Phase II Small MS4 Permit (NPDES General Permit No. CAS000004) (SWRCB 2013) has identified Non-Traditional MS4s to include prisons, large hospitals, military bases, State parks and universities. Furthermore, as of February 5, 2013, K-12 School Districts, Offices of Education, and Community Colleges are now subject to this Phase II Small MS4 Permit. According to Section F of the Phase II MS4 General Permit, Non-Traditional Permittees will be required to identify stormwater BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants in stormwater. In addition, Permittees shall be required to begin a maintenance program of all high priority storm drain systems. As such, Pepperdine University shall be excluded from the Los Angeles County North Santa Monica Bay subwatershed area.

4.2 NON-STRUCTURAL CONTROL MEASURES COMPLETED

Non-structural control measures implemented by the City since the effective date of the Permit (i.e., December 28, 2012) include:

- **Public Information and Participation Program:** includes social media, stormwater educational materials, Malibu Area Conservation Coalition, Clean Bay Restaurant Program, Living Lightly Guide, City of Malibu Quarterly Newsletter and Recreation Guide, "Keep It Clean, Malibu" campaign, "Malibu's One Water" campaign complete with community festival and mobile garden gallery, environmental videos, and the website: www.malibucity.org/cleanwater. The City distributed public education materials with information

on the proper handling and disposal of vehicle waste fluids, household waste materials, construction waste materials, pesticides and fertilizers, green waste, and animal wastes. Additionally, the City distributed specific stormwater pollution prevention public education materials to automotive part stores.

- **Industrial/Commercial Facilities:** includes maintaining a watershed-based database with the coordinates of all industrial and commercial facilities within the City that are critical sources of stormwater pollution and completing the second round of inspections of all commercial and industrial facilities during the 2017-2018 monitoring year.
- **Planning and Land Development:** includes new development projects [one (1) new development projects, all of which used on-site retention (Table 5a)], redevelopment projects (zero), any efforts beyond permit requirements, any project using alternative compliance measures (none), and enforcement actions (none).
- **Development Construction Program:** includes tracking and maintaining an inventory of all permits issued to construction projects greater than 1 acre, reviewing and approving ESCP or SWPPP, and performing inspections of construction sites and final landscaping/site stabilization inspections.
- **Public Agencies Activities Program:** includes maintaining an updated inventory of all Permittee-owned or operated facilities, developing an inventory of retrofitting opportunities, and street-sweeping appropriately.
- **Illicit Connections and Illicit Discharges Elimination Program:** includes investigating and eliminating illicit discharges and connections, documenting enforcement actions, and maintaining a hotline for the public to report illicit discharges and connections that they witness.

Non-structural control measures implemented by the County since the effective date of the Permit (i.e., December 28, 2012) include:

- **Public Information and Participation Program:** includes launching a recycled used oil and used oil filter campaign to those who “do it yourself (DIY)” – those who participated received incentives such as used oil and oil filter containers, shop towels, and a new oil filter. The County’s campaign outreach was through newspaper, radio, and television advertisements and distribution of over 3000 flyers to Community Based Organizations (CBOs) and Certified Collection Centers (CCCs). Throughout the campaign, the County maintained the Countywide Chinese hotline for Mandarin speaking DIYers. The County distributed public education materials with information on the proper handling and disposal of vehicle waste fluids, household waste materials, pesticides and fertilizers, green waste, and animal wastes. Additionally, the County distributed specific stormwater pollution prevention public education materials to automotive part stores. The County, in collaboration with the LACFCD, maintains a website that provides educational materials and opportunities for public participation toward stormwater pollution prevention and clean-up. The County’s website can be accessed at: <http://dpw.lacounty.gov/PRG/StormWater/index.cfm>. Additional stormwater-related information can be found at www.CleanLA.com. The County in collaboration with the LACFCD, provided materials and programs for in-school students enrolled in grades (K-12) through the two Countywide school education programs, the Environmental Defenders and Generation Earth through assembly presentations, in-classroom lesson plans available to teachers, teacher workshops, community events, and special projects.
- **Industrial/Commercial Facilities:** includes maintaining watershed-based database with the coordinates of all industrial and commercial facilities within the County that are critical sources of stormwater pollution. The County completed its second round of inspections of all commercial and industrial facilities before the December 28, 2017 deadline.
- **Planning and Land Development:** includes new development projects [three (3) new development projects, all of which used on-site retention (Table 5a)], redevelopment projects (zero), any efforts beyond

permit requirements, any project using alternative compliance measures (none), and enforcement actions (none).

- **Development Construction Program:** includes tracking and maintaining an inventory of all permits issued to construction projects greater than 1 acre, reviewing and approving ESCP or SWPPP, performing inspections of construction sites and final landscaping/site stabilization inspections.
- **Public Agencies Activities Program:** includes maintaining an updated inventory of all Permittee-owned or operated facilities, developing an inventory of retrofitting opportunities, and street-sweeping appropriately.
- **Illicit Connections and Illicit Discharges Elimination Program:** includes investigating and eliminating illicit discharges and connections, documenting enforcement actions, and maintaining a hotline for the public to report illicit discharges and connections that they witness.

4.3 MONITORING DATA THAT EVALUATES THE EFFECTIVENESS OF IMPLEMENTED CONTROL MEASURES IN IMPROVING WATER QUALITY

As presented in **Section 3.1**, the WMG has been implementing control measures which will improve water quality in the NSMBCW WMA. Compliance with the Santa Monica Bay Beaches Bacteria TMDL (2021 final milestone) is driving the implementation of the stormwater control measures throughout the watershed. Water quality monitoring results are presented in Section 6 of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18. Refer to **Section 3.1**, **Section 3.2**, and **Section 3.3** of this memorandum for further details.

4.4 COMPARISON OF THE EFFECTIVENESS OF THE CONTROL MEASURES TO THE RESULTS PROJECTED BY THE RAA

Sections 3.1 and **3.2** of this memorandum, as well as Section 2 of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18, and Sections 5 and 6 the City's and County's respective Annual Report Individual Forms, provide the details of the structural and non-structural control measures that have been implemented in the WMA thus far. The projects implemented within the WMA have targeted load reductions and implementation is measured in cumulative treatment acres.

Section 7.1 of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18 presents the most effective control measures on a watershed scale, as well as receiving water quality results in comparison to RAA projections. Per Section 7.1, the Paradise Cove Stormwater Facility and the Civic Center Stormwater Treatment Facility/Legacy Park are considered most effective at removing bacteria. However, despite these intensive actions, the NSMBCW WMG continues to observe fecal indicator bacteria sample results above WQOs in adjacent receiving waters. This occurrence highlights the likelihood the MS4 is unlikely to be causing or contributing to the majority of WQO exceedances in receiving waters downstream of these facilities, and that the sources are likely beyond the control of the Watershed Management Group (e.g., natural sources).

The NSMBCW EWMP is in the early stages of implementation, and with only two years of CIMP monitoring data collected (Year 2 monitoring completed during reporting year 17-18). As stated above, the Santa Monica Bay Beaches Bacteria TMDL (2021 final milestone) is driving the implementation of the stormwater control measures throughout the watershed; given this compliance milestone, the NSMBCW WMG has three years to fully implement the control measures presented in **Table 3-10**. Upon full implementation of the EWMP, the NSMBCW WMG will reanalyze and evaluate if modifications or changes to control measures are necessary. If necessary, the RAA will be revisited at an appropriate time.

4.5 COMPARISON OF CONTROL MEASURES COMPLETED TO DATE WITH CONTROL MEASURES PROJECTED TO BE COMPLETED TO DATE PURSUANT TO THE EWMP

Section 2.2, Table 2b of the NSMBCW Annual Report, Watershed Form, Reporting Year 17-18, summarizes the structural control measures completed since the effective date of the Permit (December 28, 2012). The NSMBCW WMG has implemented 19 new development and redevelopment projects, which treat over 62.12 acres and provide 0.55 ac-ft of BMP retention capacity to the WMA.

Per the milestone schedule set forth in Table 37 of the NSMBCW EWMP, the WMG must complete trash full capture system installation by 2020, and distributed and regional BMPs by 2021. Section 6.5 of the NSMBCW Annual Report, Individual Forms for the City of Malibu and County of Los Angeles, for Reporting Year 17-18, and Section 2.5 of the NSMBCW Annual Report, Watershed Form, for Reporting Year 17-18, summarizes the status and schedule for completing these projects.

4.6 CONTROL MEASURES PROPOSED TO BE COMPLETED IN THE NEXT TWO YEARS PURSUANT TO THE EWMP AND THE SCHEDULE FOR COMPLETION OF THOSE CONTROL MEASURES

Per the milestone schedule set forth in Table 37 of the NSMBCW EWMP, the WMG must complete trash full capture system installation by 2020, and distributed and regional BMPs by 2021. Section 6.5 of the NSMBCW Annual Report, Individual Forms for the City of Malibu and County of Los Angeles, for Reporting Year 17-18, and Section 2.5 of the NSMBCW Annual Report, Watershed Form, for Reporting Year 17-18, summarizes the status and schedule for completing these projects.

4.7 STATUS OF FUNDING AND IMPLEMENTATION FOR CONTROL MEASURES PROPOSED TO BE COMPLETED IN THE NEXT TWO YEARS

Sections 2 and 6 of the NSMBCW Annual Report, Individual Forms for the City of Malibu and County of Los Angeles, for Reporting Year 17-18, provides the status of funding and implementation for control measures to be completed in the next two years.

5.0 SUMMARY

The analyses presented in this memorandum were performed to determine whether the NSMBCW EWMP should be modified for greater effectiveness. These analyses concluded the following:

1. Progress toward achieving RWLs and WQBELs is varied across the WMA.
 - a. At Malibu Creek (RW-2), all constituents being monitored in the receiving waters either met pertinent RWLs or interim milestones, except for dry weather sulfate. The Malibu Creek outfall (OF-2) met the respective WQBELs. Therefore, no modifications are proposed to improve progress toward achieving RWLs and/or WQBELs at this time (**Appendix A**).
 - b. At Topanga Canyon Creek (RW-3), dry and wet weather total and dissolved lead met pertinent RWLs; however, wet and dry weather *E. coli* did not meet pertinent RWLs. *E. coli* met the interim milestone (refer to **Appendix A** or Section 7.2.1 in the NSMBCW EWMP). Therefore, no modifications are currently proposed to improve progress toward achieving RWLs and/or WQBELs at this time (**Appendix A**).
 - c. At Santa Monica Bay Beaches, despite pathogen exceedances in Jurisdictional Groups (JG) 1 and 4 during wet weather conditions, and dry weather conditions for JG 1, both JG 1 and 4 are meeting

the AED milestone (**Appendix A**). Therefore, no modifications are currently proposed to improve progress toward achieving RWLs and/or WQBELs at this time (**Appendix A**).

2. Based on the results presented in **Section 3.3**, most interim milestones defined in the NSMBCW EWMP are being met. As presented in **Section 3.3**, the WMG has achieved the interim and final milestones for SMBB Bacteria; similarly, the WMG has achieved the compliance deadline for the Malibu Creek Trash TMDL and the interim milestone for the SMB Offshore and Nearshore Debris TMDL for the Malibu Creek Watershed; however, the City still has some progress to make to achieve the interim milestone for SMB Debris TMDL. Per the WMG's Annual Report, Watershed Form, Reporting Year 17-18, the County's strategy for compliance with the SMB Debris TMDL WLA includes a phased retrofit of all catch basins throughout the NSMBCW (refer to the County's Individual Form Attachment 8.1, Exhibit 2, for additional details).
3. The Phase II Small MS4 Permit (NPDES General Permit No. S000004) (SWRCB 2013), has identified Non-Traditional MS4s to include prisons, large hospitals, military bases, State parks, and universities. Furthermore, as of February 5, 2013, K-12 School Districts, Offices of Education and Community Colleges are now subject to this order. According to Section F of the Phase II MS4 General Permit, Non-Traditional Permittees will be required to identify stormwater BMP's to be installed, implemented, and maintained to minimize the discharge of pollutants in stormwater. In addition, Permittees shall be required to begin a maintenance program of all high priority storm drain systems. As such, Pepperdine University shall be excluded from the Los Angeles County North Santa Monica Bay subwatershed area.
4. The North Santa Monica Bay Coastal Watersheds agencies have made significant progress implementing their approved EWMP, resulting in overall improvements of the water quality of receiving waters in the North Santa Monica Bay Coastal watershed. However, significant challenges remain. The passing of Measure W will provide new opportunities for funding the stormwater projects identified in the EWMP that will improve water quality working toward achieving compliance of the water quality priorities with in the North Santa Monica Bay Coastal watershed.

REFERENCES

- California State Water Resources Control Board (SWRCB), 2017. 2014 and 2016 California Integrated Report Clean Water Act Sections 303(d) and 305(b) (California Integrated Report).
- California State Water Resources Control Board (SWRCB), 2018. Impaired Waterbodies, 2014/2016 California Integrated Report https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml.
- Geosyntec Consultants, 2016a. North Santa Monica Bay Coastal Watersheds Enhanced Watershed Management Program (EWMP).
- Geosyntec Consultants, 2016b. North Santa Monica Bay Coastal Watersheds Coordinated Integrated Monitoring Program (CIMP)
- Los Angeles Regional Water Quality Control Board (LARWQCB), 2012. Order No. R4-2012-0175, NPDES Permit No. CAS004001.
- Los Angeles Regional Water Quality Control Board (LARWQCB), 2018. Reconsideration of the Revolon Slough/Beardsley Wash Trash TMDL and the Malibu Creek Watershed Trash TMDL.
- North Santa Monica Bay Coastal Watersheds Watershed Management Group (NSMBCW WMG), 2017. Monthly coordination meeting minutes, October 2018.

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APPENDIX A: WQO COMPLIANCE EVALUATION

Appendix A

Table A-1. Water Quality Objective Compliance Evaluation - Receiving Water

| | | 1 | 2.1 | | 2.1a | | 3 | | 3a | | 4 | |
|--|----------------|--|---|-----------------------|--|-----------------------|---|---------------------|---|--------------------|---|---|
| | | Annual review of data. | Are Receiving Water objectives being met? | | Is constituent an existing water quality priority? | | Was interim Receiving Water milestone met? | | Was interim OF milestone met? | | Is it the end of a permit term? | |
| | | → | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No |
| | | For Receiving Waters, proceed to Step 2.1. | Implementation is complete - report in Annual Report. No further action required. | Proceed to Step 2.1a. | Proceed to Step 3. | Proceed to Step 2.1b. | Constituent is in compliance - report in Annual Report and implement next phase of EWMP as planned. No further action required. | Proceed to Step 3a. | Constituent is in compliance - report in Annual Report and implement next phase of EWMP as planned. No further action required. | Proceed to Step 4. | Modify the EWMP and submit the modified EWMP as part of the Report of Waste Discharge. After the RWQCB reviews and approves of the modified EWMP, the proposed EWMP actions will be incorporated into a new permit. Once the new permit is in effect, the revised EWMP will be implemented. Return to Step 1 at the end of the following monitoring year. | Evaluate permit term actions and propose modifications in the Annual Report to improve progress and incorporate new water quality priorities into the EWMP. During the next monitoring year, implement the permit actions outlined in the EWMP and any feasible modifications as proposed in the Annual Report. Return to Step 1 at the end of the following monitoring year. |
| Constituent | Wet/Dry | | | | | | | | | | | |
| Malibu Creek Receiving Water (NSMBCW-RW2) | | | | | | | | | | | | |
| Category 1: TMDLs | | | | | | | | | | | | |
| Nitrate as N | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | Yes | | | | | | | | | |
| Nitrite as N | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | Yes | | | | | | | | | |
| Nitrogen, Total Kjeldahl | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | Yes | | | | | | | | | |
| Nitrogen, Total | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | Yes | | | | | | | | | |
| Total Phosphorus | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | Yes | | | | | | | | | |
| Category 2: 303(d) Listed | | | | | | | | | | | | |
| Total & Dissolved Selenium | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | Yes | | | | | | | | | |
| Sulfate | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | | No | Yes | | Yes | | | | | |
| Malibu Lagoon (MCW-1) | | | | | | | | | | | | |
| Category 1: TMDLs | | | | | | | | | | | | |
| Coliform, Total | Wet | -- | | No | | | | | | | | |
| | Dry | -- | | No | | | | | | | | |
| Coliform, Fecal | Wet | -- | | No | | | | | | | | |
| | Dry | -- | | No | | | | | | | | |
| Enterococcus | Wet | -- | | No | | | | | | | | |
| | Dry | -- | | No | | | | | | | | |
| Category 2: 303(d) Listed | | | | | | | | | | | | |
| pH | Wet | -- | Yes | | | | | | | | | |
| | Dry | -- | | No | | | | | | | | |
| CMS_ML_1 | | | | | | | | | | | | |
| Category 1: TMDLs | | | | | | | | | | | | |
| Trash | Wet | -- | | No | Yes | | No | | N/A; no interim OF milestone listed in EWMP | | | |
| | Dry | -- | | No | Yes | | No | | N/A; no interim OF milestone listed in EWMP | | | |
| GMS_ML_1 | | | | | | | | | | | | |
| Category 1: TMDLs | | | | | | | | | | | | |
| Trash | Wet | -- | | No | Yes | | No | | N/A; no interim OF milestone listed in EWMP | | | |
| | Dry | -- | | No | Yes | | No | | N/A; no interim OF milestone listed in EWMP | | | |
| Topanga Canyon Creek Receiving Water (NSMBCW-RW3) | | | | | | | | | | | | |
| Category 2: 303(d) Listed | | | | | | | | | | | | |
| Total & Dissolved Lead | Wet | | Yes | | | | | | | | | |
| | Dry | | Yes | | | | | | | | | |
| Category 3: No 303(d) Listing, RWL Exceedances and Potential Link to MS4 Discharges | | | | | | | | | | | | |
| E. Coli | Wet | | | No | Yes | | Yes; See section 7.2.1 in EWMP | | | | | |
| | Dry | | | No | Yes | | Yes; See section 7.2.1 in EWMP | | | | | |

| 1 | 2.1 | | 2.1a | | 3 | | 3a | | 4 | |
|--|---|----|--|-------------------------------|---|----|--|----|--|----|
| Annual review of data. → | Are Receiving Water objectives being met? | | Is constituent an existing water quality priority? | | Was interim Receiving Water milestone met? | | Was interim OF milestone met? | | Is it the end of a permit term? | |
| | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No |
| For Receiving Waters, proceed to Step 2.1 . | Implementation is complete - report in Annual Report. No further action required. Proceed to Step 2.1a . | | Proceed to Step 3 . | Proceed to Step 2.1b . | Constituent is in compliance - report in Annual Report and implement next phase of EWMP as planned. No further action required. Proceed to Step 3a . | | Constituent is in compliance - report in Annual Report and implement next phase of EWMP as planned. No further action required. Proceed to Step 4 . | | Modify the EWMP and submit the modified EWMP as part of the Report of Waste Discharge. After the RWQCB reviews and approves of the modified EWMP, the proposed EWMP actions will be incorporated into a new permit. Once the new permit is in effect, the revised EWMP will be implemented. Return to Step 1 at the end of the following monitoring year. Evaluate permit term actions and propose modifications in the Annual Report to improve progress and incorporate new water quality priorities into the EWMP. During the next monitoring year, implement the permit actions outlined in the EWMP and any feasible modifications as proposed in the Annual Report. Return to Step 1 at the end of the following monitoring year. | |

Jurisdictional Group 1 (SMB 1-1 through SMB 1-18)

Category 1: TMDLs

| | | | | | | | | |
|-----------------|-----|----|----|--|-----|--|--|--|
| Coliform, Total | Wet | -- | No | | Yes | | | |
| | Dry | -- | No | | Yes | | | |
| Coliform, Fecal | Wet | -- | No | | Yes | | | |
| | Dry | -- | No | | Yes | | | |
| Enterococcus | Wet | -- | No | | Yes | | | |
| | Dry | -- | No | | Yes | | | |

Jurisdictional Group 4 (SMB 4-1)

Category 1: TMDLs

| | | | | | | | | |
|-----------------|-----|----|-----|--|-----|--|--|--|
| Coliform, Total | Wet | -- | Yes | | Yes | | | |
| | Dry | -- | Yes | | Yes | | | |
| Coliform, Fecal | Wet | -- | Yes | | Yes | | | |
| | Dry | -- | Yes | | Yes | | | |
| Enterococcus | Wet | -- | No | | Yes | | | |
| | Dry | -- | Yes | | Yes | | | |

Appendix A

Table A-2. Water Quality Objective Compliance Evaluation - Outfalls

| | 1 | 2.2 | | 3a | | 4 | |
|-------------------|---|--|----|--|----|--|----|
| Step | Annual review of data. | Were final WQBELs met (based on water quality data or demonstration of no discharge)? | | Was interim OF milestone met? | | Is it the end of a permit term? | |
| Evaluation | → | Yes | No | Yes | No | Yes | No |
| Yes/No | | | | | | | |
| Action | For MS4 Outfalls, proceed to Step 2.2. | Implement in accordance with milestones and schedule for 'class'. <i>No further action required.</i> | | Constituent is in compliance - report in Annual Report and implement next phase of EWMP as planned. <i>No further action required.</i> | | Evaluate permit term actions and propose modifications in the Annual Report to improve progress and incorporate new water quality priorities into the EWMP. During the next monitoring year, implement the permit actions outlined in the EWMP and any feasible modifications as proposed in the Annual Report. Return to Step 1 at the end of the following monitoring year. | |
| | | Proceed to Step 3a. | | Proceed to Step 4. | | Modify the EWMP and submit the modified EWMP as part of the Report of Waste Discharge. After the RWQCB reviews and approves of the modified EWMP, the proposed EWMP actions will be incorporated into a new permit. Once the new permit is in effect, the revised EWMP will be implemented. Return to Step 1 at the end of the following monitoring year. | |

| | Constituent | Wet/Dry | | | | |
|---|----------------------------|---------|---|------------------------|--|--|
| Malibu Creek Outfall (NSMBCW-O2) | | | | | | |
| Category 1: TMDLs | | | | | | |
| | Nitrate as N | Wet | - | Yes. No flow observed. | | |
| | Nitrite as N | Wet | - | Yes. No flow observed. | | |
| | Nitrogen, Total Kjeldahl | Wet | - | Yes. No flow observed. | | |
| | Nitrogen, Total | Wet | - | Yes. No flow observed. | | |
| | Total Phosphorus | Wet | - | Yes. No flow observed. | | |
| | | | | | | |
| | Total & Dissolved Selenium | Wet | - | Yes. No flow observed. | | |
| | Sulfate | Wet | - | Yes. No flow observed. | | |