



MARK PESTRELLA, Director

# COUNTY OF LOS ANGELES

## DEPARTMENT OF PUBLIC WORKS

*"To Enrich Lives Through Effective and Caring Service"*

900 SOUTH FREMONT AVENUE  
ALHAMBRA, CALIFORNIA 91803-1331  
Telephone: (626) 458-5100  
<http://dpw.lacounty.gov>

ADDRESS ALL CORRESPONDENCE TO:  
P.O. BOX 1460  
ALHAMBRA, CALIFORNIA 91802-1460

October 2, 2017

IN REPLY PLEASE

REFER TO FILE: WM-7

Mr. Samuel Unger, P.E.  
Executive Officer  
California Regional Water Quality  
Control Board – Los Angeles Region  
320 West 4th Street, Suite 200  
Los Angeles, CA 90013

Attention Ms. Rebecca Christmann

Dear Mr. Unger:

### **MARINA DEL REY WATERSHED ENHANCED WATERSHED MANAGEMENT PROGRAM REQUEST FOR TIME EXTENSION**

The County of Los Angeles, Los Angeles County Flood Control District, and the Cities of Culver City and Los Angeles, collectively referred to as the MdR agencies, are requesting a time extension for the Marina del Rey (MdR) Enhanced Watershed Management Program (EWMP) plan. Enclosed is Section 7.0 *MdR EWMP Implementation Plan and Schedule* from the revised MdR EWMP plan that reflects the revised, proposed schedule. An unrevised Section 7.0 is also included for your reference. For the Back Basins, the requested extension is until March 22, 2018, which is the final compliance milestone of the Marina del Rey Toxic Pollutants Total Maximum Daily Load. In addition, the enclosed revised schedule requests changes to the interim milestones for the Front Basins and Subwatershed 2 (Ballona Lagoon).

The MdR agencies are actively working to implement many projects identified in the MdR EWMP. The scheduled modifications result from a revised scope in the Culver City – Costco Project. Due to unfavorable geotechnical results, an infiltration basin inside the Costco parking lot was deemed infeasible. The project will now consist of a detention basin along Washington Boulevard where the captured 85th percentile runoff will be slowly diverted to the existing low flow diversion, which is operated by the District. The change of scope has allowed the project to be expanded to capture an additional 24 acres from the City of Los Angeles in addition to the 42 acres serving Culver City. Culver City has hired a consultant team to design the project and the

project team is currently looking at various alternatives such as stacking or lengthening the storage tanks to minimize traffic impacts along Washington Boulevard. Culver City has also been coordinating with the City of Los Angeles which owns the sanitary sewer system to maximize the allowed discharge rate. Culver City has also been coordinating with the District to upgrade the existing pump system at the existing low flow diversion to match the allowed discharge rate. The project will be cost shared by the cities of Culver City and Los Angeles, and the District and is partially funded by the County Open Space and Parks grant program. The project design is expected to be completed by the end of 2018 and construction is expected to be completed by Spring 2021.

The County is also working diligently to address their area around the MdR Harbor. However, due to the high groundwater and lack of parkway space, typical infiltration-based green street best management practices (BMPs) are not an option in this area. In addition, a regional project to capture all the runoff in one centralized location is infeasible due to the distributed location of all the catch basins. As a result, the County is planning to retrofit the existing 13 catch basins in the MdR Harbor with water quality BMPs. The BMPs will be a proprietary BMP that acts as a settling chamber and filter system and will be installed directly in front of the existing catch basin. The BMP will be able to address the 85th percentile 24-hour storm event. The County is currently in the concept phase of the project and has been coordinating with its Department of Beaches and Harbors to synchronize construction schedules and ensure the success of the project.

The City of Los Angeles has developed a preliminary project concept report with several BMPs for the Triangle Park area, which is bordered by Abbott Kinney, Oxford Avenue, and Washington Boulevard. City of Los Angeles staff have also performed field investigations of nine areas and are developing a strategy for green street implementation. The goal of this green street implementation strategy is to identify the specific green street sites, develop the project concepts, and evaluate funding options.

The following sections will be revised in the future to reflect the revised Section 7 of the EWMP plan.

- Section ES.5 Implementation Plan and Schedule (Pages ES-9 to ES-10)
  - Figure ES-4: RAA Load Reduction Schedule (Page ES-10)
- Section ES.6 Financial Strategy (Pages ES-11 to ES-12)
  - Figure ES-5: Cost Schedule (Page ES-12)
- Section 5.2.3 Regional Priority Projects (Pages 47-65)
- Section 9.3 Non-Structural BMPs Implementation Cost (Page 95-97)
  - Table 9-1: MdR Cost Estimate by BMP Type (Page 96)

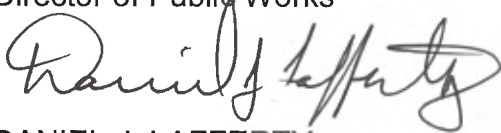
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- Table 9-8: MdR Structural BMPs Cost Estimate by Jurisdiction (Page 96)
- Table 9-9: MdR Non-Structural BMPs Cost Estimate by Jurisdiction (Page 96)
- Table 9-10: Cost Schedule for Non-Structural BMPs win MdR WMA (Page 97)

If you have any questions, please contact me at (626) 458-4300 or [dlaff@dpw.lacounty.gov](mailto:dlaff@dpw.lacounty.gov) or your staff may contact Mr. Bruce Hamamoto at (626) 458-5918 or [bhamamo@dpw.lacounty.gov](mailto:bhamamo@dpw.lacounty.gov).

Very truly yours,

MARK PESTRELLA  
Director of Public Works



DANIEL J. LAFFERTY  
Assistant Deputy Director  
Watershed Management Division

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Enc.

cc: City of Culver City  
City of Los Angeles

# Marina del Rey Enhanced Watershed Management Program Plan

Prepared For:

Marina del Rey Enhanced Watershed Management Program Agencies

County of Los Angeles

Los Angeles County Flood Control District

City of Los Angeles

City of Culver City



Original Submittal: June 30, 2015

Revised Submittal: April 26, 2016

## 7.0 MDR EWMP IMPLEMENTATION PLAN AND SCHEDULE

As previously mentioned, the MDR watershed is subject to five TMDLs; the Santa Monica Bay Nearshore Debris TMDL, Ballona Creek Trash TMDL, Santa Monica Bay DDT & PCBs TMDL, the Marina del Rey Harbor Mother's Beach and Back Basin Bacteria TMDL, and the Toxic Pollutants in Marina del Rey Harbor TMDL. Because the compliance schedule for the Toxics TMDL is the most aggressive, the Toxics WLAs were used as the primary scheduling driver for BMP implementation. . Once projects were scheduled in accordance with the Toxics TMDL goals (Table 7-1), Trash TMDL and Bacterial TMDL load reduction goals were evaluated, and additional structural and/or non-structural controls, were identified. It is worth noting that MDR EWMP Agencies have elected to demonstrate Toxics TMDL compliance through meeting final sediment WLAs for the contaminants in the TMDL. Further studies, including a planned Stressor ID Study in 2016 or effectiveness monitoring at the Oxford Basin Multi-use Enhancement Project, may indicate Toxics TMDL compliance through alternative means and may impact the implementation schedule.

To meet the compliance milestones, a phased implementation approach using a combination of structural and non-structural strategies designed specifically to reduce toxic pollutant and bacterial loading to MDR will be implemented. As detailed in the RAA section, zinc loading requires the largest load reduction and is thus the compliance driver for the Toxics TMDL (i.e., based on available data, if BMPs are implemented to achieve zinc WLA, then other toxic pollutant loads would also be below WLAs).

**Table 7-1: Summary of Marina del Rey Subwatershed RAA-Required Zinc Load Reductions**

	Subwatershed					EWMP Watershed <sup>1</sup>	
	1A	1B	2	3	4	Back Basins <sup>2</sup>	Front Basins <sup>3</sup>
Required Zinc Percent Load Reduction	96.4	95.3	21.5	87.8	95.5	95.4	95.3
Interim / Final Toxics TMDL Compliance Date	2016* /2018	2019/ 2021	NA	2016*/ 2018	2016*/ 2018	2016*/ 2018	2019/ 2021

\* Interim milestone occurs before EWMP approval.

<sup>1</sup>Excludes Subwatershed 2 area since it is outside the geographical area of MDR subject to TMDL compliance

<sup>2</sup>Tributary drainage area of Subwatersheds 1A, 3, and 4

<sup>3</sup>Tributary drainage area of Subwatershed 1B

### 7.1 Load Reduction Schedule

The requirements under the Toxics TMDL vary for the four subwatersheds constituting the MDR watershed. Subwatershed 1 is divided into two areas, Subwatershed 1A (area draining into back basins E, D, and F) and Subwatershed 1B (area draining into front basins A, B, C, G, H) because they have different target compliance dates in the Toxics TMDL. Subwatershed 2 is considered separately in this EWMP as it is outside the boundaries of the TMDL compliance area of the MDR WMA.

Table 7-1 lists the target Zinc load reductions and Toxics TMDL compliance dates for the various subwatersheds. The Toxics TMDL WLA compliance schedule uses a phased approach, where interim compliance is achieved through either demonstrating that 50% of the total drainage area served by the MS4 is meeting the WLA for sediment or alternatively, a 50% load reduction is achieved. Final compliance is demonstrated through 100% of the total area served by the MS4 meeting the WLA for

sediment. The final compliance point occurs in 2018 for the Back Basins of the harbor and in 2021 for the Front Basins.

Under the Bacteria TMDL, the final compliance date for single sample summer and winter dry weather WLAs, expressed as allowable exceedance days (Section 3.2.2), is December 28, 2017. The final compliance point for wet weather and geometric mean bacteria WLAs is July 15, 2021.

## 7.2 Structural BMP Schedule

Attaining the TMDLs' water quality goals will require significant infrastructure throughout the Mdr watershed. This section presents the implementation schedules required for regional and localized structural BMPs to meet the WLA by the specified interim and final compliance dates. The Toxics TMDL compliance points for the Back Basins are on a more accelerated schedule than the Front Basins, therefore projects within the subwatersheds that drain to the Back Basins (Subwatersheds 1A, 3 and 4) are given priority in the implementation schedule. It should be noted that the first interim milestone for the Toxics TMDL (3/22/2016) occurs prior to the final approval timeline for the EWMP.

Based on the existing pollutant loads, estimated by the WMMS model, a total zinc load reduction of approximately 95.4% and 95.3% will be required to meet the zinc WLA for the Back Basins (Subwatersheds 1A, 3, and 4) and Front Basins (Subwatershed 1B), respectively. These load reductions modeled through the RAA are used in the selection, design, scheduling, and costing, of the structural and non-structural BMPs. A detailed description of design, load reduction, implementation, and cost methodology and results are found in Appendix A and Appendix B.

The expected load reduction schedule is shown as well as the applicable TMDL compliance points (both interim and final) are shown in Table 7-2. Expected load reductions from non-structural BMPs are also included in Table 7-2.

In addition to capturing wet weather flow, the BMPs proposed in this EWMP will also treat dry weather runoff. Non stormwater management has been a priority in the Marina del Rey Watershed as evidenced by the three low-flow diversions (92,000, 20,000, and 288,000 gal/day) that were installed in 2006-2010 by the LACFCD to divert dry-weather flows to the sanitary sewer as part of the compliance strategy for the Bacteria TMDL. Additionally, the recent Bacterial TMDL TSO (No. R2-2014-0142) requires weekly dry weather flow observational monitoring at major outfalls.

The actual implementation schedule may vary depending on the results of monitoring efforts currently underway (i.e., Coordinated Monitoring Plan), planned monitoring (Coordinated Integrated Monitoring Plan), future special studies, and future BMP effectiveness analysis, environmental documentation, stakeholder process, and funding availability. Based upon an adaptive management strategy, as more watershed-specific information relating to pollutant loads is available, more detailed schedules may be developed using this basic framework. If the adaptive management process (see Section 10.0) indicates additional load reductions are required after implementation of the priority projects (Costco and the Venice Blvd. Neighborhood Project) and the other BMPs described in Section 5.2, additional BMPs may be pursued to meet TMDL requirements. The additional BMPs considered will be based upon the adaptive management process and the required reductions needed.



Table 7-2: RAA Load Reduction Schedule for Mdr Watershed Back Basins and Front Basins BMPs

Area	Percent Reduction					
	Existing†	December 2017	March 2018	March 2019	March 2020	March 2021
<b>Back Basins</b>						
<b>Back Basins (Subwatersheds 1A, 3, 4, runoff volume 486.5 acre-ft)</b>			<b>Final</b>			
Regional Projects (Costco, Parks, and Venice Neighborhood)		29.52	0.01			
Green Streets		44.53	6.67			
Low Impact Development (LID)	1.01	2.02	1.01			
Additional BMPs		6.95				
Existing BMP – Boone Olive Diversion	0.43					
Non-Structural Programs		1.5	2.5	1.5	1.0	
<b>Annual Load Reduction</b>	<b>1.44</b>	<b>84.52</b>	<b>10.19</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 95.4%</b>	<b>1.44</b>	<b>85.96</b>	<b>96.16</b>	<b>97.66</b>	<b>98.66</b>	<b>98.66</b>
<b>Subwatershed 1A (runoff volume 71.9 acre-ft)</b>						
Green Streets		53.57				
Low Impact Development (LID)	4.45	8.9	4.45			
Additional BMPs		22.91				
Non-Structural Programs		1.5	2.5	1.5	1.0	
<b>Annual Load Reduction</b>	<b>4.45</b>	<b>86.88</b>	<b>6.95</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 96.4%</b>	<b>4.45</b>	<b>91.33</b>	<b>98.29</b>	<b>99.79</b>	<b>100</b>	<b>100</b>
<b>Subwatershed 3 (runoff volume 44.7 acre-ft)</b>						
Regional Projects (Venice of America Park + Triangle Park)		5.48	0.08			
Green Streets		65.88	9.48			
Low Impact Development (LID)	0.63	1.26	0.63			
Existing BMP - Boone Olive Diversion	4.97					
Non-Structural Programs		1.5	2.5	1.5	1.0	
<b>Annual Load Reduction</b>	<b>5.6</b>	<b>74.1</b>	<b>12.7</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 87.8%</b>	<b>5.6</b>	<b>79.7</b>	<b>92.4</b>	<b>93.9</b>	<b>94.9</b>	<b>94.9</b>
<b>Subwatershed 4 (runoff volume 369.9 acre-ft)</b>						
Regional Projects (Costco and Venice Neighborhood)		37.32				
Green Streets		41.89	7.52			
Low Impact Development (LID)	0.56	1.12	0.56			
Additional BMPs		5.48				
Non-Structural Programs		1.5	2.5	1.5	1.0	
<b>Annual Total</b>	<b>0.56</b>	<b>87.3</b>	<b>10.58</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 95.5%</b>	<b>0.56</b>	<b>87.3</b>	<b>97.89</b>	<b>99.39</b>	<b>100</b>	<b>100</b>
<b>Front Basins</b>						
<b>Subwatershed 1B (runoff volume 171.8 acre-ft)</b>				<b>Interim</b>		<b>Final</b>
Green Streets		7.85	12.97	16.07	13.01	0.43
Low Impact Development (LID)	3.36	6.72	3.36	3.36	3.36	
Additional BMPs				8.8	10.4	
Non-Structural Programs		1.5	1.5	1.5	2	
<b>Annual Total</b>	<b>3.36</b>	<b>16.07</b>	<b>17.83</b>	<b>29.73</b>	<b>28.77</b>	<b>0.43</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 95.3%</b>	<b>3.36</b>	<b>19.43</b>	<b>37.25</b>	<b>66.99</b>	<b>95.76</b>	<b>96.2</b>
<b>Non-TMDL Area</b>						
Regional Projects (Canal Park + Via Dolce Park)						1.17^
Green Streets						19.00^
Low Impact Development (LID)		0.76	0.38	0.38	0.38	
Non-Structural Programs		1.5	1.5	1.5	2.0	
<b>Annual Total</b>	<b>0</b>	<b>2.26</b>	<b>1.88</b>	<b>1.88</b>	<b>2.38</b>	<b>20.17*</b>
<b>Water Quality Load Reduction-Cumulative Goal = 21.5%*</b>	<b>0</b>	<b>2.64</b>	<b>4.52</b>	<b>6.4</b>	<b>8.78</b>	<b>28.95</b>

This table is based on the percent watershed area treated by BMPs (proportional load reduction for 85th percentile storm event).

† Existing BMPs also includes estimates of load reductions associated with LID installed during 2015.

\*Additional load reduction is required to meet the TMDL WLA for the critical year and/or the interim target

\*\* Scheduled after 2021, depending on results of the Adaptive Management Process

^Structural BMPs are estimated at the total load reduction required (21.5%) to ensure that planning is in place to meet potential load reduction requirements, exclusive of non-structural and development/redevelopment BMP programs.

Table 7-3: RAA Volume (acre-feet) Capture Schedule for Mdr Watershed Back Basins and Front Basins BMPs

Area	Existing†	December 2017	March 2018	March 2019	March 2020	March 2021
<b>Back Basins</b>						
<b>Back Basins (Subwatersheds 1A, 3, 4)</b>			<b>Final</b>			
Regional Projects (Costco, Parks, and Venice Blvd)	0.00	159.15	0.05	0.00	0.00	0.00
Green Streets	0.00	190.75	26.75	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Existing BMP – Boone Olive Diversion	1.30	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>1.3</b>	<b>349.9</b>	<b>26.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>1.3</b>	<b>351.2</b>	<b>378.0</b>	<b>378.0</b>	<b>378.0</b>	<b>378.0</b>
<b>Subwatershed 1A</b>						
Green Streets	0.00	37.0	0.00	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>37.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>37.0</b>	<b>37.0</b>	<b>37.0</b>	<b>37.0</b>	<b>37.0</b>
<b>Subwatershed 3</b>						
Regional Projects (Venice of America Park + Triangle Park)	0.00	3.65	0.05	0.00	0.00	0.00
Green Streets	0.00	23.78	3.42	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Existing BMP - Boone Olive Diversion	1.30	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>1.3</b>	<b>27.4</b>	<b>3.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>1.3</b>	<b>28.7</b>	<b>32.2</b>	<b>32.2</b>	<b>32.2</b>	<b>32.2</b>
<b>Subwatershed 4</b>						
Regional Projects (Costco and Venice Blvd)	0.00	155.50	0.00	0.00	0.00	0.00
Green Streets	0.00	129.97	23.33	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>285.5</b>	<b>23.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>285.5</b>	<b>308.8</b>	<b>308.8</b>	<b>308.8</b>	<b>308.8</b>
<b>Front Basins</b>						
<b>Subwatershed 1B</b>				<b>Interim</b>		<b>Final</b>
Green Streets	0.00	13.55	22.39	27.75	22.46	0.74
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>13.6</b>	<b>22.4</b>	<b>27.8</b>	<b>22.5</b>	<b>0.74</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>13.6</b>	<b>36.0</b>	<b>63.8</b>	<b>86.3</b>	<b>87.0</b>
<b>Non-TMDL Area</b>						
Regional Projects (Canal Park + Via Dolce Park)	0.00	0.00	0.00	0.00	0.00	1.50
Green Streets	0.00	0.00	0.00	0.00	0.00	46.90
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>48.4**</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>48.4</b>

This table is based on the percent watershed area treated by BMPs (proportional load reduction for 85th percentile storm event).

† Existing BMPs category also includes estimates of load reductions associated with LID installed during 2015.

\*Additional load reduction is required to meet the TMDL WLA for the critical year and/or the interim target

\*\* Scheduled after 2021, depending on results of the Adaptive Management Process



### 7.3 Non-Structural BMP Implementation

The combined non-structural programs/projects required by the 2012 MS4 Permit and included in this EWMP are estimated to reduce up to 6.5% of the pollutant loading to Mdr. The non-structural programs/projects will be implemented early to maximize the cumulative pollutant load removals throughout the implementation period.

The non-structural BMP programs in this EWMP include modeling updates and other studies, source control, catch basin cleaning, and industry targeted outreach and education, enforcement, and inspection programs. The EWMP proposed implementation schedule for non-structural BMPs is shown in Table 7-4.

**Table 7-4: Implementation Schedule for Non-Structural BMPs within the Mdr WMA**

Permit Category	Non-Structural Solution	Potential Contaminant Reduction (%)			
		December 2017	March 2018	March 2019	2020 - 2025
Watershed Studies	<b>Pollutant Loading Model and Database</b>				
	<i>Long-Term Implementation and Updates</i>				
	<b>Total Suspended Solids/Pollutant Correlations</b>				
Industrial/Commercial Facilities Programs; Planning and Land Development; Public Agency Activities Program	<b>Collaborative Environmentally Friendly Alternative Services Program</b>		1	1	2
	<i>Planning &amp; Assessment</i>				
	<i>Long-Term Implementation</i>				
	<b>Product Substitution Campaign</b>		0.5	1	2
	<i>Planning &amp; Assessment</i>				
Public Agency Activities Program	<b>Targeted Aggressive MS4 and Catch Basin Cleaning Program</b>		1	1	1
	<i>Planning &amp; Assessment</i>				
	<i>Long-Term Implementation</i>				
Industrial/Commercial Facilities Program; Illicit Connection and Illicit Discharges Detection and Elimination Program	<b>Code Survey and Modification</b>				
	<b>Targeted inspections</b>	0.5	0.5	0.5	0.5
	<i>Evaluation/Assessment/Modification</i>				
	<b>Business-led Voluntary BMP Implementation Program</b>	0.5	0.5	0.5	0.5
	<i>Feasibility Evaluation</i>				
PIPP; Industrial/Commercial Facilities Program; Public Agency Activities Program;	<b>Outreach and Education</b>	0.5	0.5	0.5	0.5
	<b>Environmentally Friendly Boating Program</b>				
	<b>Green Gardening and Runoff Reduction Program</b>				
<b>Total Contaminant Reduction (%)</b>		<b>1.5</b>	<b>4</b>	<b>4.5</b>	<b>6.5</b>
	Represents overall project schedule.				
	Provides additional information regarding project implementation schedule.				

# Marina del Rey Enhanced Watershed Management Program Plan

Prepared For:

Marina del Rey Enhanced Watershed Management Program Agencies

County of Los Angeles

Los Angeles County Flood Control District

City of Los Angeles

City of Culver City



Original Submittal: June 30, 2015

Revised Submittal: April 26, 2016

Revised Submittal: October 1, 2017

## 7.0 MDR EWMP IMPLEMENTATION PLAN AND SCHEDULE

As previously mentioned, the Mdr watershed is subject to five TMDLs; the Santa Monica Bay Nearshore Debris TMDL, Ballona Creek Trash TMDL, Santa Monica Bay DDT & PCBs TMDL, the Marina del Rey Harbor Mother's Beach and Back Basin Bacteria TMDL, and the Toxic Pollutants in Marina del Rey Harbor TMDL. Because the compliance schedule for the Toxics TMDL is the most aggressive, the Toxics WLAs were used as the primary scheduling driver for BMP implementation. . Once projects were scheduled in accordance with the Toxics TMDL goals (Table 7-1), Trash TMDL and Bacterial TMDL load reduction goals were evaluated, and additional structural and/or non-structural controls, were identified. It is worth noting that Mdr EWMP Agencies have elected to demonstrate Toxics TMDL compliance through meeting final sediment WLAs for the contaminants in the TMDL. Further studies, including a planned Stressor ID Study in 2016 or effectiveness monitoring at the Oxford Basin Multi-use Enhancement Project, may indicate Toxics TMDL compliance through alternative means and may impact the implementation schedule.

To meet the compliance milestones, a phased implementation approach using a combination of structural and non-structural strategies designed specifically to reduce toxic pollutant and bacterial loading to Mdr will be implemented. As detailed in the RAA section, zinc loading requires the largest load reduction and is thus the compliance driver for the Toxics TMDL (i.e., based on available data, if BMPs are implemented to achieve zinc WLA, then other toxic pollutant loads would also be below WLAs).

**Table 7-1: Summary of Marina del Rey Subwatershed RAA-Required Zinc Load Reductions**

	Subwatershed					EWMP Watershed <sup>1</sup>	
	1A	1B	2	3	4	Back Basins <sup>2</sup>	Front Basins <sup>3</sup>
Required Zinc Percent Load Reduction	96.4	95.3	21.5	87.8	95.5	95.4	95.3
Interim / Final Toxics TMDL Compliance Date	2016* /2018	2019/ 2021	NA	2016*/ 2018	2016*/ 2018	2016*/ 2018	2019/ 2021

\* Interim milestone occurs before EWMP approval.

<sup>1</sup>Excludes Subwatershed 2 area since it is outside the geographical area of Mdr subject to TMDL compliance

<sup>2</sup>Tributary drainage area of Subwatersheds 1A, 3, and 4

<sup>3</sup>Tributary drainage area of Subwatershed 1B

### 7.1 Load Reduction Schedule

The requirements under the Toxics TMDL vary for the four subwatersheds constituting the Mdr watershed. Subwatershed 1 is divided into two areas, Subwatershed 1A (area draining into back basins E, D, and F) and Subwatershed 1B (area draining into front basins A, B, C, G, H) because they have different target compliance dates in the Toxics TMDL. Subwatershed 2 is considered separately in this EWMP as it is outside the boundaries of the TMDL compliance area of the Mdr WMA.

Table 7-1 lists the target Zinc load reductions and Toxics TMDL compliance dates for the various subwatersheds. The Toxics TMDL WLA compliance schedule uses a phased approach, where interim compliance is achieved through either demonstrating that 50% of the total drainage area served by the MS4 is meeting the WLA for sediment or alternatively, a 50% load reduction is achieved. Final compliance is demonstrated through 100% of the total area served by the MS4 meeting the WLA for

sediment. The final compliance point occurs in 2018 for the Back Basins of the harbor and in 2021 for the Front Basins.

Under the Bacteria TMDL, the final compliance date for single sample summer and winter dry weather WLAs, expressed as allowable exceedance days (Section 3.2.2), is December 28, 2017. The final compliance point for wet weather and geometric mean bacteria WLAs is July 15, 2021.

## 7.2 Structural BMP Schedule

Attaining the TMDLs' water quality goals will require significant infrastructure throughout the Mdr watershed. This section presents the implementation schedules required for regional and localized structural BMPs to meet the WLA by the specified interim and final compliance dates. The Toxics TMDL compliance points for the Back Basins are on a more accelerated schedule than the Front Basins, therefore projects within the subwatersheds that drain to the Back Basins (Subwatersheds 1A, 3 and 4) are given priority in the implementation schedule. It should be noted that the first interim milestone for the Toxics TMDL (3/22/2016) occurs prior to the final approval timeline for the EWMP.

Based on the existing pollutant loads, estimated by the WMMS model, a total zinc load reduction of approximately 95.4% and 95.3% will be required to meet the zinc WLA for the Back Basins (Subwatersheds 1A, 3, and 4) and Front Basins (Subwatershed 1B), respectively. These load reductions modeled through the RAA are used in the selection, design, scheduling, and costing, of the structural and non-structural BMPs. A detailed description of design, load reduction, implementation, and cost methodology and results are found in Appendix A and Appendix B.

The expected load reduction schedule is shown as well as the applicable TMDL compliance points (both interim and final) are shown in Table 7-2. Expected load reductions from non-structural BMPs are also included in Table 7-2.

In addition to capturing wet weather flow, the BMPs proposed in this EWMP will also treat dry weather runoff. Non stormwater management has been a priority in the Marina del Rey Watershed as evidenced by the three low-flow diversions (92,000, 20,000, and 288,000 gal/day) that were installed in 2006-2010 by the LACFCD to divert dry-weather flows to the sanitary sewer as part of the compliance strategy for the Bacteria TMDL. Additionally, the recent Bacterial TMDL TSO (No. R2-2014-0142) requires weekly dry weather flow observational monitoring at major outfalls.

The actual implementation schedule may vary depending on the results of monitoring efforts currently underway (i.e., Coordinated Monitoring Plan), planned monitoring (Coordinated Integrated Monitoring Plan), future special studies, and future BMP effectiveness analysis, environmental documentation, stakeholder process, and funding availability. Based upon an adaptive management strategy, as more watershed-specific information relating to pollutant loads is available, more detailed schedules may be developed using this basic framework. If the adaptive management process (see Section 10.0) indicates additional load reductions are required after implementation of the priority projects (Costco and the Venice Blvd. Neighborhood Project) and the other BMPs described in Section 5.2, additional BMPs may be pursued to meet TMDL requirements. The additional BMPs considered will be based upon the adaptive management process and the required reductions needed.

Table 7-2: RAA Load Reduction Schedule for Mdr Watershed Back Basins and Front Basins BMPs

Area	Percent Reduction					
	Existing†	December 2017	March 2018	March 2019	March 2020	March 2021
<b>Back Basins</b>						
<b>Back Basins (Subwatersheds 1A, 3, 4, runoff volume 486.5 acre-ft)</b>			<b>Final</b>			
Regional Projects (Costco, Parks, and Venice Neighborhood)		0	29.53			
Green Streets		0	51.2			
Low Impact Development (LID)	1.01	0	3.03			
Additional BMPs		0	6.95			
Existing BMP – Boone Olive Diversion	0.43					
Non-Structural Programs		0	4	1.5	1.0	
<b>Annual Load Reduction</b>	<b>1.44</b>	<b>0</b>	<b>94.72</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 95.4%</b>	<b>1.44</b>	<b>1.44</b>	<b>96.16</b>	<b>97.66</b>	<b>98.66</b>	<b>98.66</b>
<b>Subwatershed 1A (runoff volume 71.9 acre-ft)</b>						
Green Streets		0	53.57			
Low Impact Development (LID)	4.45	0	13.35			
Additional BMPs		0	22.91			
Non-Structural Programs		0	4	1.5	1.0	
<b>Annual Load Reduction</b>	<b>4.45</b>	<b>0</b>	<b>93.83</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 96.4%</b>	<b>4.45</b>	<b>4.45</b>	<b>98.29</b>	<b>99.79</b>	<b>100</b>	<b>100</b>
<b>Subwatershed 3 (runoff volume 44.7 acre-ft)</b>						
Regional Projects (Venice of America Park + Triangle Park)		0	5.56			
Green Streets		0	75.36			
Low Impact Development (LID)	0.63	0	1.89			
Existing BMP - Boone Olive Diversion	4.97					
Non-Structural Programs		0	4	1.5	1.0	
<b>Annual Load Reduction</b>	<b>5.6</b>	<b>0</b>	<b>86.81</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 87.8%</b>	<b>5.6</b>	<b>5.6</b>	<b>92.4</b>	<b>93.9</b>	<b>94.9</b>	<b>94.9</b>
<b>Subwatershed 4 (runoff volume 369.9 acre-ft)</b>						
Regional Projects (Costco and Venice Neighborhood)		0	37.32			
Green Streets		0	49.41			
Low Impact Development (LID)	0.56	0	1.68			
Additional BMPs		0	5.48			
Non-Structural Programs		0	4	1.5	1.0	
<b>Annual Total</b>	<b>0.56</b>	<b>0</b>	<b>97.89</b>	<b>1.5</b>	<b>1.0</b>	<b>0</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 95.5%</b>	<b>0.56</b>	<b>0.56</b>	<b>98.45</b>	<b>99.95</b>	<b>100</b>	<b>100</b>
<b>Front Basins</b>						
<b>Subwatershed 1B (runoff volume 171.8 acre-ft)</b>				<b>Interim</b>		<b>Final</b>
Green Streets		0	0	36.89	13.01	0.43
Low Impact Development (LID)	3.36	0	0	13.44	3.36	
Additional BMPs				8.8	10.4	
Non-Structural Programs		0	0	4.5	2	
<b>Annual Total</b>	<b>3.36</b>	<b>0</b>	<b>0</b>	<b>63.63</b>	<b>28.77</b>	<b>0.43</b>
<b>Toxics TMDL Load Reduction-Cumulative Goal = 95.3%</b>	<b>3.36</b>	<b>3.36</b>	<b>3.36</b>	<b>66.99</b>	<b>95.76</b>	<b>96.2</b>
<b>Non-TMDL Area</b>						
Regional Projects (Canal Park + Via Dolce Park)						1.17^
Green Streets						19.00^
Low Impact Development (LID)		0	0	1.52	0.38	
Non-Structural Programs		0	0	4.5	2.0	
<b>Annual Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6.02</b>	<b>2.38</b>	<b>20.17*</b>
<b>Water Quality Load Reduction-Cumulative Goal = 21.5%*</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6.02</b>	<b>8.4</b>	<b>28.95</b>

This table is based on the percent watershed area treated by BMPs (proportional load reduction for 85th percentile storm event).

† Existing BMPs also includes estimates of load reductions associated with LID installed during 2015.

\*Additional load reduction is required to meet the TMDL WLA for the critical year and/or the interim target

\*\* Scheduled after 2021, depending on results of the Adaptive Management Process

^Structural BMPs are estimated at the total load reduction required (21.5%) to ensure that planning is in place to meet potential load reduction requirements, exclusive of non-structural and development/redevelopment BMP programs.

Table 7-3: RAA Volume (acre-feet) Capture Schedule for Mdr Watershed Back Basins and Front Basins BMPs

Area	Existing†	December 2017	March 2018	March 2019	March 2020	March 2021
<b>Back Basins</b>						
<b>Back Basins (Subwatersheds 1A, 3, 4)</b>			<b>Final</b>			
Regional Projects (Costco, Parks, and Venice Blvd)	0.00	0.00	159.2	0.00	0.00	0.00
Green Streets	0.00	0.00	217.5	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Existing BMP – Boone Olive Diversion	1.30	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>1.3</b>	<b>0</b>	<b>376.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>1.3</b>	<b>1.3</b>	<b>378.0</b>	<b>378.0</b>	<b>378.0</b>	<b>378.0</b>
<b>Subwatershed 1A</b>						
Green Streets	0.00	0.00	37	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>0.00</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>0.00</b>	<b>37.0</b>	<b>37.0</b>	<b>37.0</b>	<b>37.0</b>
<b>Subwatershed 3</b>						
Regional Projects (Venice of America Park + Triangle Park)	0.00	0	3.7	0.00	0.00	0.00
Green Streets	0.00	0	27.2	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Existing BMP - Boone Olive Diversion	1.30	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>1.3</b>	<b>0</b>	<b>30.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>1.3</b>	<b>1.3</b>	<b>32.2</b>	<b>32.2</b>	<b>32.2</b>	<b>32.2</b>
<b>Subwatershed 4</b>						
Regional Projects (Costco and Venice Blvd)	0.00	0	155.5	0.00	0.00	0.00
Green Streets	0.00	0	153.3	0.00	0.00	0.00
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>0</b>	<b>308.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>0</b>	<b>308.8</b>	<b>308.8</b>	<b>308.8</b>	<b>308.8</b>
<b>Front Basins</b>						
<b>Subwatershed 1B</b>				<b>Interim</b>		<b>Final</b>
Green Streets	0.00	0	0	63.7	22.5	0.74
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Additional BMPs	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>63.7</b>	<b>22.5</b>	<b>0.74</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>0</b>	<b>0</b>	<b>63.7</b>	<b>86.2</b>	<b>87.0</b>
<b>Non-TMDL Area</b>						
Regional Projects (Canal Park + Via Dolce Park)	0.00	0.00	0.00	0.00	0.00	1.50
Green Streets	0.00	0.00	0.00	0.00	0.00	46.90
Low Impact Development (LID)	0.00	0.00	0.00	0.00	0.00	0.00
Non-Structural Programs	0.00	0.00	0.00	0.00	0.00	0.00
<b>Annual Volume Reduction</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>48.4**</b>
<b>Toxics TMDL Cumulative Volume Reduction (Acre-ft)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>48.4</b>

This table is based on the percent watershed area treated by BMPs (proportional load reduction for 85th percentile storm event).

† Existing BMPs category also includes estimates of load reductions associated with LID installed during 2015.

\*Additional load reduction is required to meet the TMDL WLA for the critical year and/or the interim target

\*\* Scheduled after 2021, depending on results of the Adaptive Management Process



### 7.3 Non-Structural BMP Implementation

The combined non-structural programs/projects required by the 2012 MS4 Permit and included in this EWMP are estimated to reduce up to 6.5% of the pollutant loading to Mdr. The non-structural programs/projects will be implemented early to maximize the cumulative pollutant load removals throughout the implementation period.

The non-structural BMP programs in this EWMP include modeling updates and other studies, source control, catch basin cleaning, and industry targeted outreach and education, enforcement, and inspection programs. The EWMP proposed implementation schedule for non-structural BMPs is shown in Table 7-4.

**Table 7-4: Implementation Schedule for Non-Structural BMPs within the Mdr WMA**

Permit Category	Non-Structural Solution	Potential Contaminant Reduction (%)			
		December 2017	March 2018	March 2019	2020 - 2025
Watershed Studies	<b>Pollutant Loading Model and Database</b>				
	<i>Long-Term Implementation and Updates</i>				
	<b>Total Suspended Solids/Pollutant Correlations</b>				
Industrial/Commercial Facilities Programs; Planning and Land Development; Public Agency Activities Program	<b>Collaborative Environmentally Friendly Alternative Services Program</b>		1	1	2
	<i>Planning &amp; Assessment</i>				
	<i>Long-Term Implementation</i>				
	<b>Product Substitution Campaign</b>		0.5	1	2
	<i>Planning &amp; Assessment</i>				
Public Agency Activities Program	<b>Targeted Aggressive MS4 and Catch Basin Cleaning Program</b>		1	1	1
	<i>Planning &amp; Assessment</i>				
	<i>Long-Term Implementation</i>				
Industrial/Commercial Facilities Program; Illicit Connection and Illicit Discharges Detection and Elimination Program	<b>Code Survey and Modification</b>				
	<b>Targeted inspections</b>	0	1	0.5	0.5
	<i>Evaluation/Assessment/Modification</i>				
	<b>Business-led Voluntary BMP Implementation Program</b>	0	1	0.5	0.5
	<i>Feasibility Evaluation</i>				
PIPP; Industrial/Commercial Facilities Program; Public Agency Activities Program;	<b>Outreach and Education</b>	0	1	0.5	0.5
	<b>Environmentally Friendly Boating Program</b>				
	<b>Green Gardening and Runoff Reduction Program</b>				
<b>Total Contaminant Reduction (%)</b>		<b>0</b>	<b>5.5</b>	<b>4.5</b>	<b>6.5</b>
		Represents overall project schedule.			
		Provides additional information regarding project implementation schedule.			