Heal the Bay

STORMWATER REPORT

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Tracking progress towards managing stormwater pollution in Los Angeles County from 2012 through 2018.

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ACRONYMS

AF	-	Acre-feet
BC	-	Ballona Creek
BMP	-	Best Management Practice
CIMP	-	Coordinated Integrated Monitoring Program
CWA	-	Clean Water Act
DC	-	Dominguez Channel
DCE	-	Dominguez Channel Estuary
DDT	-	Dichlorodiphenyltrichloroethane
EWMP	-	Enhanced Watershed Management Program
FIB	-	Fecal Indicator Bacteria
LA	-	Los Angeles
LAR	-	Los Angeles River
LID	-	Low Impact Development
MC	-	Malibu Creek
MCW	-	Malibu Creek Watershed
MdR	-	Marina del Rey
MS4	-	Municipal Separate Storm Sewer System
NGO	-	Non-Governmental Organization
PCB	-	Polychlorinated Biphenyl
RAA	-	Reasonable Assurance Analysis
SCWP	-	The Safe, Clean Water Program
SGR	-	San Gabriel River
SMB	-	Santa Monica Bay
TMDL	-	Total Maximum Daily Load
USCR	-	Upper Santa Clara River
WMP	-	Watershed Management Program

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Executive Summary

There are 208 waterbodies in the Los Angeles Region that the California State Water Resources Control Board (State Board) has listed as impaired by pollutants.[1] A total of 1,318 impairments are listed by the State Board because many of these waterbodies are impaired by multiple pollutants such as bacteria, heavy metals, nutrients, pesticides, and trash.[1] Stormwater is a significant source of the pollution that impairs the rivers, lakes, and ocean of Southern California.[1,2] To address many of these impairments, Total Maximum Daily Loads (TMDLs) have been set. These are limits on the amount of a given pollutant that may be added to a pollutant-impaired waterbody.[3] These TMDLs have associated deadlines to bring the waterbody into compliance so that it can safely support human activities and wildlife.

Reports in the Los Angeles area show that water quality is much worse during wet weather (i.e., within 72 hours of a significant rain event).[4,5] This is a result of how Los Angeles County manages its stormwater. In the Los Angeles Region, the storm drain system is separate from the sewer system. While sewage is sent to treatment facilities to be cleaned before it is discharged, stormwater flows over streets, through storm drains, and out into receiving waters, picking up bacteria, metals, trash, and other pollutants along the way that pose serious risks to public and environmental health. During dry weather, runoff from overwatering lawns, washing cars, and other activities also flows over streets and through the storm drain system. This is called dry weather runoff, and it is also a significant source of pollution in the waterbodies of Los Angeles County.[1,6] The State Board and the Regional Board, collectively referred to as the Boards, regulate municipal stormwater and dry weather runoff through Clean Water Act (CWA) Municipal Separate Storm Sewer System (MS4) Permits. Cities and Counties are permittees under the MS4 Permit, and are responsible for the stormwater and dry weather runoff that originate from within their jurisdictional boundaries.[7] The first MS4 Permit for the Los Angeles Region was issued in 1990, and the Los Angeles County MS4 Permit was most recently renewed in 2012.[7]

The 2012 Los Angeles County MS4 Permit includes newly incorporated TMDL requirements and gives permittees the opportunity to coordinate through watershed management groups to jointly develop and implement Watershed Management Programs (WMPs) or Enhanced WMPs (EWMPs) to address stormwater and dry weather runoff.[7] Through the 2012 Los Angeles County MS4 Permit, the Boards allow permittees enrolled in a WMP or EWMP to exceed interim TMDL deadlines if the WMP or EWMP group is developing or implementing its program. The Boards envision the WMPs and EWMPs as alternative compliance pathways that allow a permittee flexibility in how it complies with the MS4 Permit. These programs allow each permittee to choose the types of projects (e.g., regional projects, green streets, and incentives for projects on private land) to build in its watershed and, to a large extent, the timeline on which the projects are built. Most permittees in Los Angeles County have chosen to participate in a WMP or EWMP (Figure ES-1).[8] Therefore, WMP or

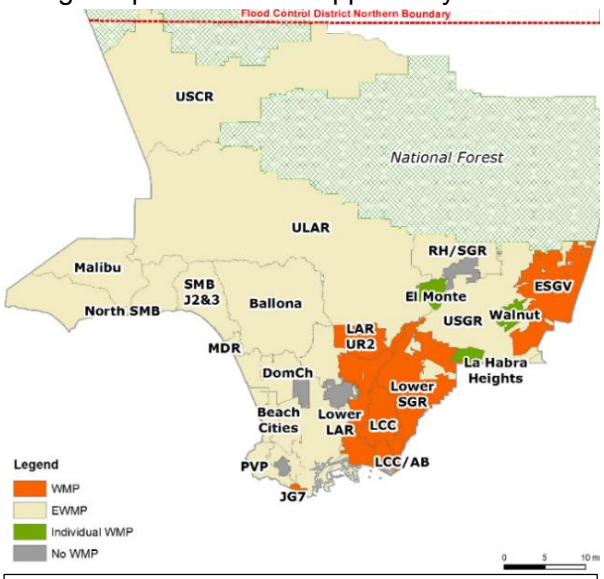

Figure ES-1: *Visual status of the EWMP/WMP Group Areas as of 02/04/2016.*[8]

EWMP implementation is the primary way that the Regional Board assesses progress towards compliance under the MS4 Permit. Unfortunately, the flexibility described above has created uncertainty about the measurable requirements of a WMP or EWMP. If compliance is assessed based on implementation, implementation should be clearly defined and measured in transparent and publicly available documents.

In preparation for the next MS4 Permit renewal in 2020, this report determines whether watershed management groups are making meaningful progress to limit stormwater pollution through the EWMP alternative compliance pathway, and whether the current reporting format is transparent and accessible to all stakeholders, including the public. As detailed in this report, assessment of EWMP implementation progress is difficult and time-consuming because it is hard to identify relevant details in EWMPs, including the interim and final goals. Additionally, Annual Reports do not denote when a permittee is out of compliance with the requirements of its EWMP. These difficulties assessing progress under the EWMPs allow for prolonged exceedances of interim water quality objectives, as programs are often adjusted without meaningful implementation. These difficulties also limit the accessibility of the permit to members of the public, who are directly affected by the stormwater pollution that results from noncompliance.

In response to these challenges, this report offers a clear strategy to measure progress under the EWMP alternative compliance pathway that is based on the "Retention Capacity of Projects Completed Since 12/28/2012 [acre-feet (AF)]" provided in the Annual Report, as a percentage of the total AF goal provided in the EWMP. Essentially, we propose that assessment be performed by comparing the amount of runoff addressed so far (in AF) against the total amount of runoff that needs to be addressed (in AF) before the relevant TMDL deadline. This report outlines our attempt to perform this assessment based on information available in the EWMPs, the most recent (2017-2018) Annual Reports, and all supplemental documents including the Adaptive Management Reports that are required to be submitted to the Regional Board by the permittees, and are posted online. Research outside of the above listed documents was limited in order to identify areas where permittee reporting needs to be improved.

With the exception of the Dominguez Channel Watershed Management Group (60.06% complete towards its final goal) and the North Santa Monica Bay Coastal Watersheds Management Group (22.88% complete towards its final goal), all of the measurable EWMP groups in Los Angeles County assessed in this report were less than 10% complete towards final goals, and some were less than 1% complete (Figure ES-2) as of December 2018.

Collectively, (excluding the three EWMP groups that do not have final AF goals [the North Santa Monica Bay Coastal Watersheds Management Group, the Beach Cities Watershed Management Group, and the Rio Hondo / San Gabriel River EWMP Group]), the EWMP groups achieved a total retention capacity of 1,057.32 AF since 12/28/12. However, these nine EWMP groups collectively originally proposed a total retention capacity goal of 12,228.59 AF, which means that collectively, EWMP groups in Los Angeles County were approximately 8.65% complete towards final retention capacity goals as of December 2018. If the current rate of implementation continues, many of the permittees will fall woefully short of their targets when final deadlines pass, prolonging pollution of our waterways.

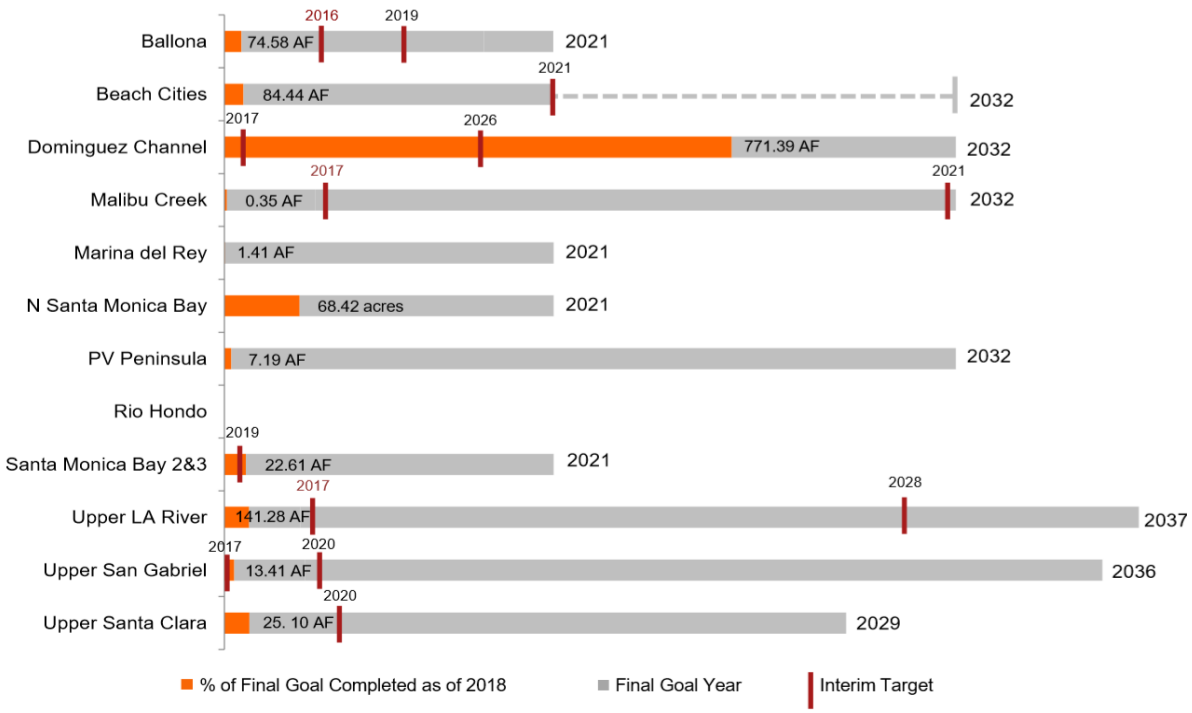

Figure ES-2: *Overall assessment of progress for each of the 12 EWMP groups in the Los Angeles Region, based on either total retention capacity (AF) or total area addressed (acres)*. Each grey bar represents the final goal for each EWMP, labelled with the final deadline to reach this goal. The orange portion of the bar represents the retention capacity of projects completed since 12/28/12 (i.e., progress made since the 2012 Los Angeles County MS4 Permit was approved) as a percentage of the total goal. Interim targets, when provided, are displayed with red vertical lines as a percentage of the total goal, and labeled with the relevant interim deadline year. A final goal was not provided in the Rio Hondo EWMP, so progress cannot be displayed. Only an interim goal was provided in the Beach Cities EWMP, so the final goal was uncertain, identified with a dashed line above. The North Santa Monica Bay Coastal Watersheds Management Group elected to assess its progress by total area addressed (acres).

The Los Angeles County MS4 Permit must be based on water quality objectives. Any alternative compliance pathway should also have measurable goals and deadlines to hold permittees accountable for making progress towards those objectives. To strengthen the 2020 MS4 Permit, we recommend that compliance under the WMP and EWMP alternative compliance pathways be assessed by project capacity in AF (i.e., the amount of stormwater and dry weather runoff captured, treated, infiltrated, or diverted by active projects) compared to the most updated final AF goal, and that permittees are held accountable for meeting both interim and final AF goals. This will allow permittees to continue their collaborative work through the WMP and EWMP programs, while also allowing the Boards and the public to more easily assess implementation and compliance. Reporting on the implementation of the MS4 Permit must be accessible to keep the public engaged and help them understand how projects in their community will improve water quality. For the 2020 MS4 Permit, we recommend that the Regional Board adopt the transparent and accessible reporting framework proposed in this report (Table ES-1), which provides vital information in a single location.

Project Status										
Jurisdiction	**Name of Project**	**Type of Project**	**Subwatershed**	**Project Information**	**Status**	**Project Capacity - Proposed in WMP/EWMP (AF)**	**Project Capacity - Proposed in Reporting Year (AF)**	**Current Project Capacity (AF)**	**(Expected) Completion Date**	**On Schedule (as proposed in the WMP/EWMP)**
XXX	XXX	XXX	XXX	**Location/Lat-Long:** **Description:** **Total Project Cost:** **Funding Source:** **Community Benefits:**	COMPLETED	### (projected)	### (actual)	### (actual)	MM/DD/YYYY	
~~YYY~~	~~YYY~~	~~YYY~~	~~YYY~~	~~**Location/Lat-Long:**~~ ~~**Description:**~~ ~~**Total Estimated Project Cost:**~~ ~~**Funding Status:**~~ ~~**Community Benefits:**~~	~~CANCELLED~~	~~###~~ ~~(projected)~~				
YYY	YYY	YYY	YYY	**Location/Lat-Long:** **Description:** **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	CONSTRUCTION		### (projected)		MM/DD/YYYY	Y/N
ZZZ	ZZZ	ZZZ	ZZZ	**Location/Lat-Long:** **Description:** **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	DESIGN	### (projected)	### (projected)		MM/DD/YYYY	Y/N
* should equal the sum of projected capacity for all projects listed, excluding cancelled projects ** should equal the sum of actual completed capacity for all completed projects				**Final Project Capacity Goal**	MET: Y/N	Final Goal* (AF):		Current Project Capacity**	YYYY	Y/N
				Most Recent Interim Project Capacity Goal	MET: Y/N	Interim Goal (AF):		Current Project Capacity**	YYYY	Y/N
				Next Interim Project Capacity Goal	MET: Y/N	Interim Goal (AF):		Current Project Capacity**	YYYY	Y/N

Table ES-1: *A template of the suggested reporting format*. This table is based on the "Status of Multi-Year Efforts" table submitted as an attachment to the Ballona Creek Watershed Management Group. Many EWMP groups, though not all, submitted a similar status of multi-year efforts report. This table should include every project in an EWMP, including projects that retain runoff, projects that treat runoff, projects that allow for natural infiltration, and projects that otherwise divert the discharge of polluted stormwater and dry weather runoff into Los Angeles' waterways. The table is limited to projects completed under the MS4 Permit since 12/28/12, and should include a project completion date. The table should also include all cancelled projects, indicated in red strikethrough format, to be replaced by a new project with similar retention capacity. The bottom of the table includes the final retention capacity goal, as well as both the most recent and the next upcoming interim deadlines, if applicable. Many EWMP groups rely on steady new/redevelopment projects to reach their final goal. This table should include a row for new/redevelopment projects that combines all individual projects into as a single ongoing project. Each individual new/redevelopment project need not be listed separately. The column labeled "Project Capacity – Proposed in Reporting Year" will help permittees and the public track when a project is downsized and a new project must be added to make up the difference. The sum of the "Project Capacity – Proposed in WMP/EWMP" and "Project Capacity – Proposed in Reporting Year" columns should equal the final AF goal. An example of this reporting format is provided in Appendix B for the Malibu Creek Watershed Management Group.

Los Angeles County must address its stormwater and dry weather runoff pollution more effectively considering the risk that this pollution poses to public and environmental health, and the CWA requirements that permittees must adhere to. Permittees have had nearly 30 years to comply with the MS4 Permit since it was first issued in 1990, and have had nearly 7 years to develop plans (e.g., WMPs, EWMPs, and green streets master plans) to achieve compliance under the latest 2012 Los Angeles County MS4 Permit. Permittees should not be allowed to prolong EWMP implementation at the expense of water quality. More must be done both on a large scale (regional) and small scale (neighborhoods or individual parcels) to address stormwater and dry weather runoff pollution throughout Los Angeles County.

Fortunately, watershed management groups have new opportunities to improve project implementation moving forward. Funding from the Safe, Clean Water Program (SCWP) will be dispersed throughout Los Angeles County starting in Spring 2020, increasing available funding for stormwater projects by approximately $280 million *per year*.[9] This will more than double the annual amount spent by all permittees on stormwater projects in Los Angeles County since 12/28/12.[10] SCWP funds can be further leveraged with other sources, including Measure A (Los Angeles County Safe, Clean Neighborhood Parks and Beaches Protection), Measure M (Los Angeles County Traffic Improvement Plan), Measure H (Los Angeles County Homelessness Initiative), Proposition 1 (California State Stormwater Grant Program), and Proposition 68 (California State Parks, Environment, and Water Bond). With plans in place and new funding opportunities at hand, the approval of a strong 2020 Los Angeles County MS4 Permit could lead to meaningful implementation of stormwater projects moving forward. Effective projects would significantly improve water quality throughout Los Angeles County, protecting both public and environmental health, while also providing multiple additional benefits to Los Angeles communities such as new open space, air quality improvements, and climate resiliency.

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Introduction

Los Angeles' Stormwater Pollution Problem

Stormwater and dry weather runoff are a significant source of pollution in the rivers, lakes, and ocean of Southern California.[1,2,4,5,6] This is a result of how Los Angeles manages its stormwater. In the Los Angeles Region, the storm drain system, called the municipal separate storm sewer system (MS4), is separate from the wastewater sewer system. Separating these systems reduces the risk of sewage spills when storms might flood the sewage system. However, this separate system is also the reason why stormwater flows directly into Southern California's rivers, lakes, and ocean without being filtered or treated. While sewage is sent to treatment facilities to be cleaned before it is discharged, stormwater flows over streets, through storm drains, and out into receiving waters picking up bacteria, metals, trash, and other pollutants along the way. In the 2018-2019 rain season, 18.82 inches of rain fell over Los Angeles County, resulting in almost 200 billion gallons of stormwater runoff polluting its waterbodies.[11,12] This runoff poses a serious risk to public and environmental health. In fact, the public health cost of gastrointestinal illnesses caused by contact with polluted ocean waters is between $14 and $35 million each year in Los Angeles County.[13] This runoff can also lead to water and sediment toxicity that is detrimental to ecological health.[1]

Water Quality in Los Angeles County

There are 208 waterbodies in the Los Angeles Region that the California State Water Resources Control Board (State Board) has listed as impaired by pollutants.[1] A total of 1,318 impairments are listed by the State Board because many of these waterbodies are impaired by multiple pollutants such as bacteria, heavy metals, nutrients, pesticides, and trash.[1] To address many of these impairments, Total Maximum Daily Loads (TMDLs) have been set. These are limits on the amount of a given pollutant that may be added to a pollutant-impaired waterbody.[14] These TMDLs have associated deadlines to bring the waterbody into compliance so that it can safely support human activities and wildlife. Some final TMDL deadlines have already passed (e.g., Santa Monica Bay Dry Weather Bacteria [2012], and Machado Lake Trash TMDL [2016]), while others will pass within the next two decades.

A 2018 assessment of temporal trends in water quality at mass discharge stations[I] throughout Los Angeles County between 2002 and 2017 indicated few statistically significant improvements in water quality over that period.[5] This assessment examined trends in bacteria (*E. coli* and fecal coliform), dissolved heavy metals (copper, lead, zinc, and aluminum), diazinon, and cyanide.[5] Out of 80 sets of data, 52 did not indicate any statistically significant change in water quality between 2002 and 2017, while 23 indicated a statistically significant *decline* in water quality, particularly for bacteria and heavy metals.[5] The decline in water quality for heavy metals may be attributed to improvements in detection limits or sampling errors. However, heavy metals remain a concern because they are still found at high concentrations, impairing waterbodies throughout Los Angeles County.[1] There was a statistically significant improvement in water quality for diazinon; this is likely the result of source reduction through restriction on this pesticide for residential use.[5] According to the assessment, water quality declined in wet weather (i.e., within 72 hours of a rain event), indicating a significant contribution from polluted stormwater discharges flowing over streets, through the storm drain system, and out into receiving waters.[5]

[I] Mass discharge stations are in-stream monitoring locations with automated samplers with data available from 2002 to 2015, which has been collected by permittees and submitted to the Regional Board.[5]

Heal the Bay's Beach Report Card, which assigns A through F grades to hundreds of beaches along the West Coast based on fecal indicator bacteria (FIB) levels, has shown slight improvements in beach water quality within the Santa Monica Bay during dry weather (i.e., not within 72 hours of a rain event) since 1988.[15] However, there is still work to be done to protect public and environmental health considering that thousands of violations of dry weather bacteria limits continue to occur throughout the Santa Monica Bay.[16] Concentrations of FIB and other contaminants increase dramatically during wet weather, both at beaches and within inland waterbodies throughout Los Angeles County.[4,5] In 2018, Los Angeles County had only two beaches on Heal the Bay's Honor Roll list,[II] and also had three of the ten Beach Bummers.[III] Heal the Bay's 2018 River Report Card showed FIB exceedances during summer months in popular inland recreational waters in the Los Angeles Region.[6] There tended to be fewer exceedances in the upper watershed areas, particularly closer to the San Gabriel Mountains, and more exceedances further downstream as the water flows into and through the Los Angeles Basin.[6] Effluent samples taken directly from stormdrains along the main stem of the Los Angeles River during the summer dry months also showed high FIB concentrations, indicating that runoff from the MS4 system is a significant source of pollution, even during dry weather.[6] This dry weather runoff comes from activities such as overwatering lawns and washing cars in driveways, and it follows the same path as stormwater (through our storm sewer system).

History of the Los Angeles County MS4 Permit

The Clean Water Act (CWA) requires the permitting of identifiable pollution discharge locations, referred to as point sources, under the CWA National Pollutant Discharge Elimination System program.[17] Given the contribution from stormwater and dry weather runoff to the persistent water quality issues across Los Angeles County, this runoff must be effectively regulated. Stormwater and dry weather runoff originates from an entire watershed, but is discharged through MS4 storm drain outfalls which are identifiable discharge locations regulated as point sources. The State Board and the Los Angeles Regional Water Quality Control Board (Regional Board), referred to collectively as the Boards, regulate stormwater and dry weather runoff through the MS4 Permit Program. The first MS4 Permits in the Los Angeles Region were issued in 1990. Within the boundaries of the Regional Board, there are currently separate permits for Ventura County, the City of Long Beach, and the County of Los Angeles. Each jurisdiction is a permittee under the MS4 Permit and is responsible for the stormwater and dry weather runoff that is disharged from stromdrains within its jurisdictional boundaries, and runoff that originates within jurisdictional boundaries and contributes to comingled discharges.[7]

When the "Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4" Permit (Los Angeles County MS4 Permit) was most recently issued in 2012, TMDL requirements were incorporated into the permit, including interim and final TMDL deadlines.[7] Through the 2012 Los Angeles County MS4 Permit, permittees are given the opportunity to coordinate with each other to meet the newly-incorporated TMDL requirements. This coordination has been encouraged in the past, but for the 2012 Los Angeles County MS4 Permit, coordination can be done through a watershed

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[II] In order to qualify for the Honor Roll list, a beach must be sufficiently sampled and receive exemplary grades for all three weather conditions: Summer Dry, Winter Dry, and Year-Round Wet. Out of approximately 500 beaches in California, 33 beaches in total made the Honor Roll list in 2018.[4]

[III] Beach Bummers are the top 10 most polluted beaches in terms of FIB levels reviewed under Heal the Bay's Beach Report Card.[4]

management group that develops and implements a Watershed Management Program (WMP), or alternatively, an Enhanced WMP (EWMP), the latter of which addresses runoff from an 85th percentile rain event to reduce stormwater discharge and associated pollution. Coordination efforts include a Coordinated Integrated Monitoring Program (CIMP) to provide a region-wide data set to track trends in water quality and to identify pollution sources. CIMP data is submitted to the Regional Board, but a comprehensive analysis of regional water quality trends is not required. The Boards envision the WMPs and EWMPs as alternative compliance pathways that allow permittees flexibility in how they comply with the MS4 Permit. These programs allow each permittee to choose the types of stormwater capture projects to build in its watershed and, to a large extent, the timeline on which the projects are built. The 2012 Los Angeles County MS4 Permit, as approved by the Boards, also allows permittees enrolled in a WMP or EWMP to exceed interim TMDL deadlines if they are in compliance with their approved program.[7]

The Need for Assessment of EWMP Compliance

The MS4 Permit must be simple, measurable, enforceable, and accessible. A simple permit has clear and straightforward requirements against which progress is measurable, making the permit enforceable. If the MS4 Permit includes consistent reporting requirements, partnerships with non-governmental organizations (NGOs) can help to make the Permit accessible to all stakeholders, including the public, who are affected by the lack of project implementation and associated poor water quality. Unfortunately, as written, the 2012 Los Angeles County MS4 Permit and its WMP and EWMP compliance strategies are not simple, measurable, easily enforceable, or accessible, so assessment of progress is not straightforward.[IV,18]

WMP and EWMP compliance must be clear and easily measurable in order to hold permittees accountable. Continued water quality violations, the result of slow project implementation, cause beachgoers to get sick and allow for the continued pollution of ecosystems. It is a waste of time and resources for plans to be continually adjusted without meaningful implementation.[V,19] We believe the Los Angeles Regional Board needs to develop a clear and comprehensive way to assess overall progress towards MS4 Permit compliance under the WMP and EWMP alternative compliance pathways. This report seeks to evaluate implementation progress of the 12 EWMPs in the Los Angeles Region, and to create a reporting format to more easily assess compliance.

[IV] For example, the approval letter of the Ballona Creek EWMP states that The Los Angeles Water Board will determine the permittees' compliance with the EWMP "on the basis of the compliance actions and milestones included in the EWMP including, but not limited to the following: Table 4-1 Summary of Regional Projects, Table 6-6 Limiting BC Pollutant Reductions for Interim and Final Compliance, Section 7 Detailed EWMP Implementation Strategy and Compliance Schedule, Table 8-1 WMP Control Measures to be assessed for Compliance Determination with [Ballona Creek Watershed Management Group] EWMP if [Receiving Water Limitations] and [Water Quality-based Effluent Limits] are not Attained per the Timelines Prescribed in the Permit and EWMP, Appendix 7.A Detailed Recipe for Final EWMP Compliance (Compliance Targets and EWMP Implementation Strategy), and Appendix 7.c Scheduling of Control Measures for EWMP and TMDL Milestones."[18] We were unable to easily determine many of the referenced milestones against which progress would be measured under this approach.

[V] For example, for the Beach Cities EWMP, three versions of the EWMP were submitted prior to final approval in April 2016. An additional Revised EWMP was approved in March 2018, and a new modification request was submitted in December 2018.[19]

Methods

Data Collection

This report assessed the progress and information accessibility of the 12 EWMPs in the Los Angeles Region (Figure 1). We did not analyze WMPs or individual cities' plans for this report.[VI,20]

We first determined relevant interim and final TMDL deadlines based on information provided in the EWMPs. Then, when possible, we determined values for the following metrics for 1) the most recent (2017-2018) reporting year, 2) the period of time from the date of Permit renewal (12/28/12) to the end of the 2017-2018 reporting year, and 3) as proposed in the EWMPs:

- Number of new/redevelopment projects[VII,21] completed,
- Number of miles of green streets[VIII,21] completed,
- Number of "other projects"[IX,21] completed,
- Area addressed (acres),[X]
- Total retention capacity in acre-feet (AF),[XI] and
- Number of regional projects[XII,21] completed.

[VI] The Regional Board identified the type of program (EWMP, WMP, or Individual WMP) that each permittee or group of permittees chose as its alternative compliance pathway. Some permittees chose not to use an alternative compliance pathway, so their "selected program" was listed as not applicable.[20]

[VII] New/redevelopment projects utilize low impact development (LID), which uses "control measures implemented on parcels to retain stormwater runoff during rain events. For the EWMP, the group members' LID ordinances are also incorporated. In addition, residential LID programs are incorporated to incentivize adoption of rain cisterns and other methods to reduce runoff from residential properties… Group members will also investigate LID retrofits on public parcels."[21]

[VIII] Green streets "retain runoff from roads and alleys, and indirectly from roofs and parking surfaces. Green streets will potentially offer many other benefits to communities."[21]

[IX] "Other projects" was an ambiguous grouping of projects left undefined in many EWMP groups' Annual Reports. For the Ballona Creek EWMP, "other projects" was defined as "green streets, regional projects, low flow diversions and other retrofits."[21] For the purpose of this report, it was assumed that this definition applied to all 12 EWMPs.

[X] Area addressed was not clearly defined in the EWMPs. For the purpose of this report, it was assumed that "area addressed (acres)" meant that the stormwater and dry weather runoff from the reported area was captured, treated, infiltrated, or otherwise diverted from receiving waters.

[XI] Total retention capacity (AF) was not clearly defined in the EWMPs. For the purpose of this report, it was assumed that the total retention capacity (AF) referred to the amount of stormwater and dry weather runoff that a project has the capacity to capture, treat, infiltrate, or otherwise divert from receiving waters.

[XII] Regional projects were not clearly defined in the EWMPs, but were considered "an emphasis of the Permit because they are able to capture runoff from large upstream areas. The EWMP emphasizes implementation of regional projects, particularly those that are able to retain the 85th percentile, 24-hour storm event."[21]

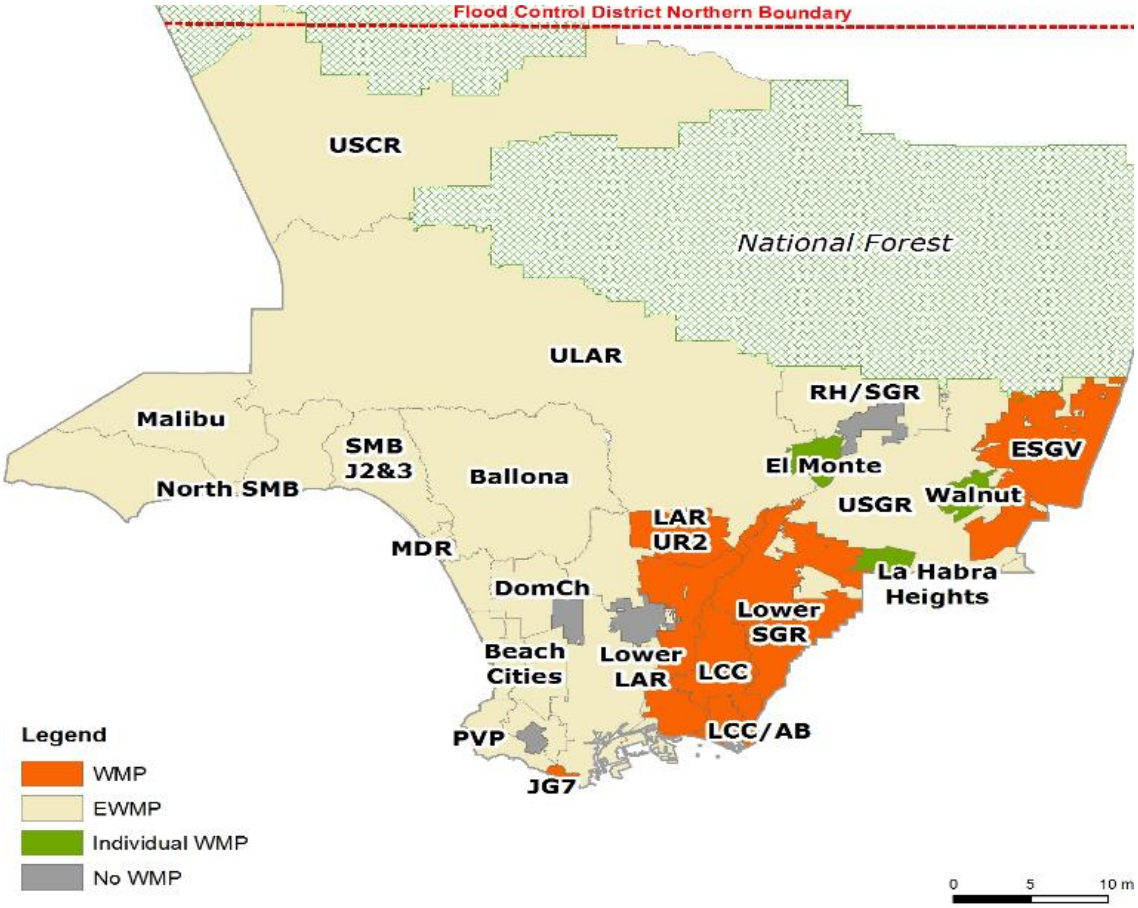

Figure 1: *Visual status of the EWMP/WMP Group Areas as of 02/04/2016.*[8] This report focused on the EWMP groups, which are shown in Figure 1 in beige.

The values for each of these metrics were derived from the most recent EWMP, including revised EWMPs, and from relevant Annual Reports as well as supporting documents such as Adaptive Management Reports. We focused on these publicly available documents and limited the use of external research in order to assess progress using the same information made available to Regional Board staff and to the public. Limited external research was used only when possible and necessary to find critical information about whether a completed project listed by name in the Annual Report was a regional project. Even with this restriction on additional research, for each of the 12 EWMPs, it was necessary to search through multiple documents, many of which had hundreds of pages and several appendices.[XIII,22,23]

[XIII] For example, six documents were reviewed to assess progress for the Ballona Creek Watershed Management Group: the original approved EWMP, three Annual Reports (2015-2016, 2016-2017, and 2017-2018), and the most recent Adaptive Management Report and Status of Multi-Year Efforts attachments. This adds up to more than 600 pages in six documents, which were found in different locations on the Regional Board website. Completed projects were listed by name in the Adaptive Management Report, so additional internet research was possible in this case, and this internet research was necessary to understand the types of projects completed since 12/28/12, and to identify actual project completion dates.[22,23]

Compliance Assessment

Each watershed management group was required to perform a Reasonable Assurance Analysis to determine the required pollutant reduction to meet water quality objectives, often reported in the EWMPs as a total retention capacity (AF) necessary to achieve the required pollutant reduction.[24] EWMP Annual Report requirements include a report of the retention capacity (AF) for projects completed in the reporting year and the retention capacity (AF) of all projects completed since 12/28/12. This provides a reported number in AF that is comparable to the original EWMP goal in AF. Therefore, in this report, we assessed compliance of the EWMPs by recording the total retention capacity of completed stormwater projects in AF as of the most recently submitted Annual Report (December 2018), and compared this capacity to the total retention capacity that must be achieved in AF according to the EWMP. When interim goals and deadlines were provided, we also assessed progress towards the most recently passed interim deadline and the closest upcoming interim deadline. For the case of the North Santa Monica Bay Coastal Watersheds Management Group, which elected to set its final goal and report its progress based on the area addressed (acres), we also conducted our assessment based on area addressed (acres), rather than retention capacity (AF).

We then calculated the percentage that each EWMP group achieved in meeting its final goal. Between the date of permit approval (12/28/12) and the submittal of the most recent Annual Reports (December 2018), six years had passed. The rate of implementation was calculated based on the percent complete achieved as of December 2018 over the six years since the permit was approved. Based on this rate of implementation (percent completed per year), we projected the estimated completion year, assuming that the implementation rate remains steady.

We also attempted to assess compliance based on the number of projects completed; this included the number of new/redevelopment projects completed, the number of miles of green streets constructed, the number of “other projects” completed, and the number of regional projects completed. We conducted this assessment (based on the number of projects completed) whenever possible for the 12 EWMP groups.

Development of Reporting Framework

The reporting framework developed for this report was based on the “Status of Multi-Year Efforts” table submitted as an attachment to the Ballona Creek Watershed Management Group’s Annual Report. Many EWMP groups, though not all, submitted a similar status of multi-year efforts report. While completing our assessment, we kept track of the challenges that made it difficult to understand EWMP implementation progress. Through identification of these challenges, we identified the information necessary to make reporting more transparent and therefore make assessment easier. Finally, we worked these additional information items into the existing “Status of Multi-Year Efforts” table submitted by the Ballona Creek Watershed Management Group, and reformatted the table as necessary.

Results

Assessment by Retention Capacity (AF) or Area Addressed (acres)

Our analysis of permittees' most recent Annual Reports and EWMPs revealed serious gaps in information necessary to assess progress under the MS4 Permit. It was difficult to determine basic yet critical implementation information such as limiting pollutant(s) for subwatersheds, relevant deadlines, and the number of AF that must be captured to achieve compliance. This information was typically provided in the EWMP, though was difficult to find therein, and sometimes required our own calculations.[XIV,25] In addition, each EWMP group reported information differently, which made it difficult to compare progress across groups.

After significant effort, we applied our progress assessment based on retention capacity (AF) to each of the 12 EWMP groups (Table 1 and Figure 2). See Appendix A for individual reports of each of the 12 EWMP groups, with detailed descriptions and references for how each value was derived.

We were unable to confidently determine final AF goals for three of the watershed management groups: The Rio Hondo / San Gabriel River Watershed Management Group, The Beach Cities Watershed Management Group, and the North Santa Monica Bay Coastal Watersheds Management Group.

The Rio Hondo / San Gabriel River Watershed Management Group: We were not able to complete an assessment based on retention capacity (AF), due to a lack of adequate information in the publicly available documents reviewed in this report. As of December 2018, the Rio Hondo / San Gabriel River Watershed Management Group achieved a retention capacity of 2.02 AF since 12/28/12 (Table 1). However, we were not able to determine any interim or final capacity goal for the 2037 final deadline, and therefore were unable to assess progress. Therefore, assessment of overall progress towards interim and final goals based on retention capacity (AF) was not possible for the Rio Hondo / San Gabriel River Watershed Management Group.

The Beach Cities Watershed Management Group: The Beach Cities Watershed Management Group provided a 2021 interim AF goal, but did not provide a final goal. As of December 2018, the Beach Cities Watershed Management Group achieved a retention capacity of 84.44 AF since 12/28/12, which was 5.78% complete towards the 2021 interim goal of 1,460.8 AF (Table 1 and Figure 2). This left a retention capacity of 1,376.36 AF to be achieved by the 2021 interim deadline. If the current rate of implementation continues, the 2021 interim goal will be achieved in the year 2116 (Table 1). It is unclear how long it will take to achieve final compliance with the final goal, since no 2032 final AF goal was provided in the EWMP.

The North Santa Monica Bay Coastal Watersheds Management Group: The North Santa Monica Bay Coastal Watersheds Management Group chose to identify its goal, and report its progress, in terms of the area addressed (acres). As of December 2018, the North Santa Monica Bay Coastal Watersheds Management Group achieved 68.42 acres of area addressed since 12/28/12, which was 22.88% complete towards the 2021 final goal of 299.1 acres (Table 1 and Figure 2). This left 230.68 acres to be addressed by 2021. If the current rate of

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[XIV] For example, for the Beach Cities Watershed Management Group, all projects listed in the Enhanced Watershed Program for the Beach Cities Watershed Management Area (2018), page ES-13, Table ES-5; and page ES-24, Table ES-10, were listed with "Design Storage Volume (cu-ft.)" which were added up and converted to AF in order to identify the final AF goal.[25]

implementation continues, the final 2021 goal will be achieved in the year 2039 (Table 1). Additionally, the Annual Report stated that the North Santa Monica Bay Coastal Watersheds Management Group achieved a retention capacity of 0.55 AF as of December 2018.[26] Without a clear definition of the terms “area addressed (acres)” and “retention capacity (AF),” it is unclear what the area addressed (68.42 acres) means in terms of pollution reduction and how it relates to the small amount of retention capacity achieved (0.55 AF).

We were able to confidently determine final AF goals for the remaining nine EWMPs. The Dominguez Channel Watershed Management Group was the only group on track to achieve its EWMP goals before its final deadline passes.

The Dominguez Channel Watershed Management Group: As of December 2018, the Dominguez Channel Watershed Management Group achieved a retention capacity of 771.39 AF since 12/28/12, which surpassed the 2017 and 2026 interim goals, and was 60.06% complete towards the 2032 final goal of 1,284.30 AF (Table 1 and Figure 2). This left a retention capacity of only 512.91 AF to be achieved by 2032. Therefore, the Dominguez Channel Watershed Management Group is currently in compliance with the 2017 interim deadline and the upcoming 2026 interim deadline. If the current rate of implementation continues, the final 2032 goal will be achieved in the year 2022 (Table 1).

All of the other EWMP groups in Los Angeles County with measurable AF goals were less than 10% complete towards their final goals as of December 2018, two of which were less than 1% complete towards their final goals.

The Ballona Creek Watershed Management Group: As of December 2018, the Ballona Creek Watershed Management Group achieved a retention capacity of 74.58 AF since 12/28/12, which was 3.58% complete towards the 2021 final retention capacity goal of 2,081 AF (Table 1 and Figure 2). This group was out of compliance with its 2016 deadline. There remained a retention capacity of 1,061.42 AF to be achieved by the 2019 interim deadline and a total retention capacity of 2,006.42 AF to be achieved by the 2021 final deadline. If the current rate of implementation continues, the final 2021 goal will be achieved in the year 2180 (Table 1).

The Malibu Creek Watershed Management Group: As of December 2018, the Malibu Creek Watershed Management Group achieved a retention capacity of 0.35 AF since 12/28/12, which was 0.36% complete towards the 2032 final retention capacity goal of 96.3 AF (Table 1 and Figure 2). This group was out of compliance with the 2017 interim deadline. There remained a retention capacity of 95.35 AF to be achieved by 2021 and a total retention capacity of 95.95 AF to be achieved by 2032. If the current rate of implementation continues, the final 2032 goal will be achieved in the year 3663 (Table 1).

The Marina del Rey Watershed Management Group: As of December 2018, the Marina del Rey Watershed Management Group achieved a retention capacity of 1.41 AF since 12/28/12, which was 0.21% complete towards the 2021 final retention capacity goal of 673.1 AF (Table 1 and Figure 2). This left a retention capacity of 671.69 AF to be achieved by 2021. If the current rate of implementation continues, the final 2021 goal will be achieved in the year 4877 (Table 1).

The Palos Verdes Peninsula Watershed Management Group: As of December 2018, the Palos Verdes Peninsula Watershed Management Group achieved a retention capacity of 7.19 AF since 12/28/12, which was 0.96% complete towards the 2032 final retention capacity goal of 750 AF (Table 1 and Figure 2). This left a retention capacity of 742.81 AF to be achieved by 2032. If the current rate of implementation continues, the final 2032 goal will be achieved in the year 2638 (Table 1).

The Santa Monica Bay Jurisdictions 2&3 Watershed Management Group: As of December 2018, the Santa Monica Bay Jurisdictions 2 &3 Watershed Management Group achieved a retention capacity of 22.61 AF since 12/28/12, which was 6.50% complete towards the 2021 final retention capacity goal of 348.1 AF (Table 1 and Figure 2). This group was already in compliance with its 2019 deadline. However, there remained a retention capacity of 325.49 AF to be achieved by 2021. If the current rate of implementation continues, the final 2021 goal will be achieved in the year 2105 (Table 1).

The Upper Los Angeles River Watershed Management Group: As of December 2018, the Upper Los Angeles River Watershed Management Group achieved a retention capacity of 141.28 AF since 12/28/12, which was 2.72% complete towards the 2037 final retention capacity goal of 5,191 AF (Table 1 and Figure 2). This group was out of compliance with its 2017 deadline. Additionally, there remained a retention capacity of 3,826.72 AF to be achieved by 2028 and a total retention capacity of 5,049.72 AF to be achieved by 2037. If the current rate of implementation continues, the final 2037 goal will be achieved in the year 2233 (Table 1).

The Upper San Gabriel River Watershed Management Group: As of December 2018, the Upper San Gabriel River Watershed Management Group achieved a retention capacity of 13.41 AF since 12/28/12, which is 1.13% complete towards the 2036 final goal of 1,182.59 AF (Table 1 and Figure 2). This group was in compliance with its 2017 interim deadline. However, there remained a retention capacity of 95.43 AF to be achieved by 2020, and a total retention capacity of 1,169.18 AF of to be achieved by 2036. If the current rate of implementation continues, the final 2036 goal will be achieved in the year 2542 (Table 1).

The Upper Santa Clara River Watershed Management Group: As of December 2018, the Upper Santa Clara River Watershed Management Group achieved a retention capacity of 25.10 AF since 12/28/12, which was 4.03% complete towards the 2029 final retention capacity goal of 622.2 AF (Table 1 and Figure 2). This left a retention capacity of 76.50 AF to be achieved by 2020, and a total retention capacity of 597.10 AF to be achieved by 2029. If the current rate of implementation continues, the final 2029 goal will be achieved in the year 2161 (Table 1).

Collectively, (excluding the three EWMP groups that do not have final AF goals [the North Santa Monica Bay Coastal Watersheds Management Group, the Beach Cities Watershed Management Group, and the Rio Hondo / San Gabriel River EWMP Group]), the EWMP groups achieved a total retention capacity of 1,057.32 AF since 12/28/12. However, these nine EWMP groups collectively originally proposed a total retention capacity goal of 12,228.59 AF, which means that collectively, EWMP groups in Los Angeles County were approximately 8.65% complete towards final retention capacity goals as of December 2018. If the current rate of implementation continues, Los Angeles County EWMP groups will achieve their total collective goal in 2082, though final deadlines range from 2021 to 2037 (Table 1).

The Dominguez Channel Watershed management Group is the only group on track to achieve its final goal before its deadline passes. Unless implementation rates improve dramatically, the Ballona Creek, Malibu Creek, Marina del Rey, North Santa Monica Bay, Palos Verdes Peninsula, Santa Monica Bay Jurisdictions 2&3, Upper Los Angeles River, Upper San Gabriel River, and Upper Santa Clara River Watershed Management Groups will fall short of their EWMP goals when the final deadlines pass, allowing the continued discharge of polluted stormwater and dry weather runoff, and putting permittees out of compliance with federal CWA requirements.

Watershed Management Group	Total Retention Capacity Since 12/28/12	Interim Goal (Interim Deadline Year)	Final Goal (Final Deadline Year)	% Complete Towards Final Goal	Current Rate of Implemen-tation	Expected Completion Year
Ballona Creek	74.58 AF	428 (2016) 1,136 AF (2019)	2,081 AF (2021)	3.58%	0.60%/year	2180
Beach Cities	84.44 AF	1,460.8 AF (2021)	- (2032)	- (5.78%)*	- (0.96%/year)*	- (2116)*
Dominguez Channel	771.39 AF	1 AF (2017) 459.47 AF (2026)	1,284.30 AF (2032)	60.06%	10.01%/year	2022
Malibu Creek	0.35 AF	12.0 AF (2017) 95.7 AF (2021)	96.3 AF (2032)	0.36%	0.06%/year	3663
Marina del Rey	1.41 AF	-	673.1 AF (2021)	0.21%	0.04%/year	4877
North Santa Monica Bay**	68.42 acres	-	299.1 acres (2021)	22.88%	3.81%/year	2039
Palos Verdes Peninsula	7.19 AF	-	750 AF (2032)	0.96%	0.16%/year	2638
Rio Hondo / San Gabriel River	2.02 AF	-	- (2037)	-	-	-
Santa Monica Bay Jurisdictions 2&3	22.61 AF	20.5 AF (2019)	348.1 AF (2021)	6.50%	1.08%/year	2105
Upper Los Angeles River	141.28 AF	431 AF (2017) 3,968 AF (2028)	5,191 AF (2037)	2.72%	0.45%/year	2233
Upper San Gabriel River	13.41 AF	0.03 AF (2017) 108.84 AF (2020)	1,182.59 AF (2036)	1.13%	0.19%/year	2542
Upper Santa Clara River	25.10 AF	101.6 AF (2020)	622.2 AF (2029)	4.03%	0.67%/year	2161
TOTAL* **	**1,057.32 AF**	**-**	**12,228.59 AF (2021-2037)**	**8.65%**	**1.44%/year**	**2082**

* The Beach Cities Watershed Management Group provided only a 2021 interim goal, but no final goal. The results listed in parentheses are based on progress made towards achieving the 2021 interim goal.
** The North Santa Monica Bay Coastal Watersheds Management Group was the only EWMP group that elected to determine its final goal and report its progress in term of area addressed (acres).
*** This total includes only the EWMP Groups for which there were final retention capacity goals (AF), with progress also reported in terms of retention capacity (AF). Therefore, this total does not include progress made under Beach Cities, North Santa Monica Bay, or Rio Hondo / San Gabriel River.

Table 1: *Summary of the EWMP progress assessment.* See Appendix A for individual reports of each of the 12 EWMP groups, with detailed descriptions and references for how each value was derived.

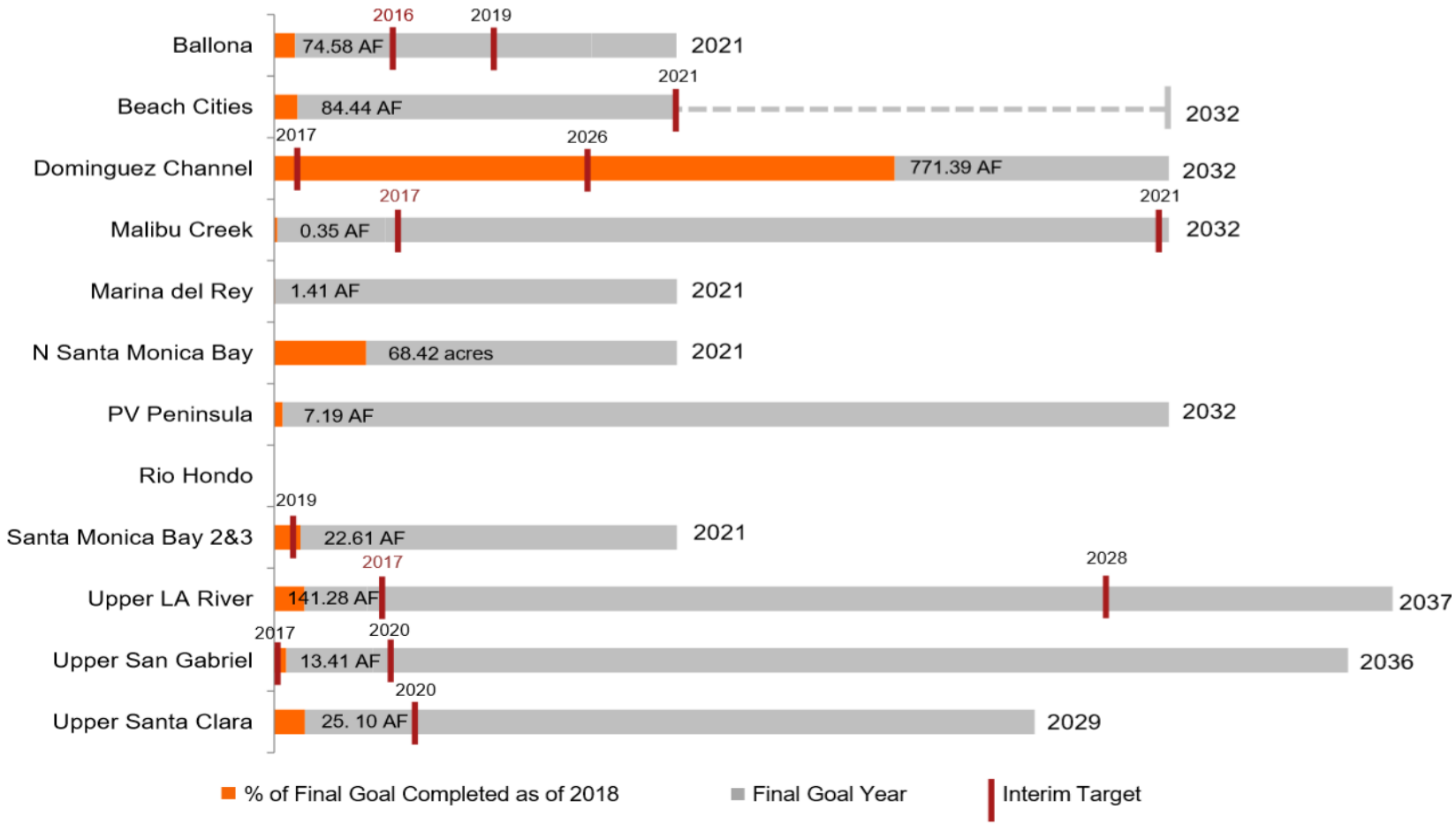

Figure 2: *Overall assessment of progress for each of the 12 EWMP groups, based on either total retention capacity (AF) or total area addressed (acres)*. Each grey bar represents the final goal for each EWMP, labelled with the final deadline to reach this goal. The orange portion of the bar represents the retention capacity of projects completed since 12/28/12 (i.e., progress made since the 2012 Los Angeles County MS4 Permit was approved). Interim targets, when provided, are displayed with red vertical lines as a percentage of the total goal, and labeled with the relevant interim deadline year. A final goal was not provided in the Rio Hondo EWMP, so progress cannot be displayed. Only an interim goal was provided in the Beach Cities EWMP, so the final goal was uncertain, designated above with a dashed line. The North Santa Monica Bay Coastal Watersheds Management Group elected to assess its progress by total area addressed (acres).

Assessment by Number of Projects Completed

Assessment based on the number of regional projects completed was possible when lists of proposed regional projects were clearly provided in the EWMP and lists of completed regional projects with details were provided in the Annual Reports. This type of assessment was completed in this report for each EWMP when possible. Based on our assessment, the 12 EWMP groups collectively completed 12 out of 214 proposed regional projects since 12/28/12 (Appendix A).

Although it was possible in some cases to track progress based only on the number of regional projects completed, this did not provide a comprehensive overview of progress made by a group, because all 12 EWMPs relied on more than just regional projects to achieve final goals, including new/redevelopment projects, green streets, and other retrofits, many of which were reported along with regional projects as a single reported number of "other projects" completed. Collectively, the 12 EWMP groups completed 183 "other projects." However, goals for the number of new/redevelopment projects, the number of miles of green streets, and the number of "other projects" were rarely listed in the EWMPs. As a result, an overall assessment of progress based on the number of projects completed rather than the retention capacity of those projects was not possible given the information provided in the documents reviewed for this report.

Specific issues we encountered related to tracking regional projects, new/redevelopment projects and green street projects are discussed below.

<u>Regional Projects</u>

Regional projects were an important component of EWMP compliance strategies because they were one of the central strategies for meeting targets.[XV,27] Based on our review, we identified five primary issues that made it difficult to track regional implementation progress based on the number of projects implemented:

1) There was no clear definition of a regional project within the EWMP program.
2) Many permittees did not identify the full scope of regional projects they planned to implement within their EWMPs, and did not explain how those regional projects changed in subsequent EWMP revisions.[XVI,28]
3) Most EWMP groups submitted inconsistent project information, making it extremely difficult to track implementation progress.[XVII,29,30] None of the EWMP groups included adequate information in the Annual Report about regional project implementation progress compared to the original project implementation plans included in the EWMP. Further, regional projects

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[XV] For example, the Upper Los Angeles River Watershed Management Group reported that 57% of its total control measure capacity for compliance by 2028 would come from regional projects, including 31% from private regional projects, and 26% from regional projects on public land.[27]

[XVI] For example, the Upper Los Angeles River Watershed Management Group identified regional project candidates in Appendix 4 of its Revised EWMP, but the Annual Report stated only that "more than seven" regional projects were in progress, without clarifying which projects were in progress, what their status was, or if any regional projects were completed.[27,28]

[XVII] For example, the Malibu Creek Watershed Management Group identified regional projects by a site ID in the EWMP but used a name in the Annual Report, making it difficult to track how projects progress or change over time.[29,30]

were reported within a tally of "other projects" in the Annual Report, which made it difficult to track different types of projects without doing outside research. Because project names change frequently, this type of outside research was very challenging.

4) Some EWMPs relied heavily on regional projects to be conducted on larger private parcels (private regional projects), but did not report information about these projects, including project identification and progress.[XVIII,27,30]
5) The reported number of regional projects could be misleading. Some groups reported separate phases of a single project as multiple projects.[XIX,31] Additionally, at least one group included projects completed before 12/28/12 in the Annual Report, even though the reporting requirements only allow permittees to report projects built after that date.[XX,23]

New/Redevelopment Projects

The number of new/redevelopment projects completed in the reporting year and since 12/28/12 were contained in Annual Reports. However, the majority of EWMP groups did not report the proposed AF to be captured by these projects nor the expected rate of development. Without specified goals, it was difficult to understand what the number of projects meant in terms of implementation progress.[XXI,31] Relatedly, the metrics associated with the new/redevelopment projects were not clearly defined so it was difficult to compare progress across groups.[XXII,29]

Green Streets

Most of the groups depended heavily on green streets to meet compliance deadlines.[XXIII,32,30] However, few green streets were constructed as of December 2018, and many groups were

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[XVIII] For example, the Malibu Creek Watershed Management Group expected 27% of its required capacity to come from private regional projects in order to meet its final goal.[30] And the Upper Los Angeles River Watershed Management Group expected 31% of its required capacity to come from private regional projects.[27]

[XIX] For example, Table 2e on page 6 of the Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18 split one regional project into three projects, but elsewhere it was described as a single project.[31]

[XX] The Ballona Creek Watershed Management Group listed seven "other projects" as completed since 12/28/12. Review of projects listed by name on page 8 of the Adaptive Management Report revealed that four were likely regional projects (Transfer Station Rain Garden and Stormwater Capture and Diversion Project, USC Rain Gardens, Mar Vista Rec. Center Stormwater Capture Project, and Westside Water Quality Improvement Project). An internet search determined that two of these projects were completed prior to 12/28/12 (Mar Vista Rec. Center Stormwater Capture Project, completed in 2009; and Westside Water Quality Improvement Project, completed in 2006).[23]

[XXI] For example, the Palos Verdes Peninsula Watershed Management Group explained that the number of new/redevelopment projects was lower than expected because the rate of redevelopment triggering LID requirements was lower than projected.[31]

[XXII] For example, 12 new/redevelopment projects were completed in Malibu Creek since 12/28/12 and they apparently "address" 4,037 acres. It is unclear what "address" means and how so few projects could address such a large area.[29]

[XXIII] For example, both Marina del Rey and Malibu Creek relied on green streets to meet over half of their structural capacity targets.[32,30]

simply waiting for the County of Los Angeles' Green Streets Master Plan/Green Alley Master Plan to be finalized in 2020 before constructing any green streets projects. Further, in the few instances where green streets were constructed, it was difficult to track progress because the goal was often not provided. When a goal was provided in the EWMP, it was set in terms of the total retention capacity (AF) to be achieved through green streets projects, but progress was reported in terms of miles constructed rather than total retention capacity (AF).[XXIV,33]

[XXIV] For example, see Beach Cities EWMP 17-18 Annual Report, page 6, Table 2e, "Length (if green streets) [miles]."[33]

Recommendations

EWMP Compliance Assessment by Project Capacity (AF)

Most EWMP groups have not made sufficient progress towards reducing stormwater and dry weather runoff. Currently, the EWMP alternative compliance pathway is not leading to significant water quality improvements. Clear and measureable goals with enforceable deadlines are necessary to ensure that progress improves moving forward. The Los Angeles County MS4 Permit must be based on water quality objectives, so it should also have measurable goals and deadlines to hold permittees accountable for making progress towards those objectives. We recommend that the Regional Board assess progress under the WMP and EWMP alternative compliance pathways based on project capacity (AF), defined clearly as the amount of stormwater or dry weather runoff that is captured, treated, infiltrated, or otherwise diverted from receiving waters. This should be done by reporting the project capacity (AF), as defined above, of all projects completed since 12/28/12 as a percentage of the interim and final project capacity goals (AF), all of which should be provided in the Annual Report. This straight-forward reporting will be more understandable to stakeholders, including members of the public, and will help the Regional Board assess progress and compliance with the WMP and EWMP compliance pathway.

For any group that elects to approach WMP or EWMP compliance in terms of area addressed (acres), such as the North Santa Monica Bay Coastal Watersheds Management Group, the group must also report project capacity (AF) equivalents. In addition, the Regional Board should define area addressed (acres) so that it can be more easily related to project capacity (AF). We recommend that it be defined so that one acre of land addressed is equivalent to all stormwater and dry weather runoff from one acre of land during the 85th percentile storm being captured, treated, infiltrated, or diverted by active projects. Finally, groups that approach compliance in terms of area addressed (acres) should also be required to report equivalent interim and final goals in terms of project capacity (AF), and to report progress in terms of project capacity (AF). This will provide clarity and transparency in the Permit, and will allow for the direct comparison of implementation progress across watershed management groups.

Transparent Reporting

We have developed a proposed reporting format (Table 2) that would make progress under the WMP and EWMP alternative compliance pathways more measurable, transparent, and accessible, and would help address the current challenges of assessing progress. We suggest that this table be completed each year and included as an attachment to the Annual Report. This table is based on the “Status of Multi-Year Efforts” table submitted as an attachment to the Annual Report for the Ballona Creek Watershed Management Group, but with some critical adjustments to include information necessary to assess progress. This table should include every project in a WMP or EWMP, including all proposed projects necessary to reach the final AF goal, and all completed projects (since 12/28/12) with the associated completion date. The table should also include all cancelled projects in red strikethrough format. This will help permittees and stakeholders clearly identify when a new project is necessary to replace a cancelled project.

The name of the lead “Jurisdiction” and the “Name of Project” are vital if further information about a specific project is desired by a stakeholder. The “Type of Project” is important in order to know the scale of the project and the approach used to address runoff (retention, treatment, infiltration, etc.). The “Subwatershed” helps to identify the region where runoff is being retained.

Under “Project Information,” the project **Location/Lat-Long** is used to locate the project site and helps track a project when the name is changed. The **Description** would give more information than the “Type of Project” (i.e., infiltration galleries, dry wells, nature-based solutions, etc.) and would be sufficiently detailed so that additional research is not necessary to understand what approach is being utilized. **Total Project Cost** and **Funding Source** for completed projects will keep track of final costs and help other permittees identify potential funding sources and better estimate project costs. The **Total Estimated Project Cost** and **Funding Status** will identify whether a project is fully funded, and via which funding source(s). Listing the **Community Benefits** provided by a project will help stakeholders and communities identify projects that will improve their communities and may help provide support for certain funding types.

The “Status” of the project provides the development stage that the project is in (i.e., pre-design, design, permitting, construction, completed). The “Project Capacity - Proposed in WMP/EWMP (AF)” for all of the projects must equal the final project capacity goal (AF) from the WMP or EWMP. This column will allow permittees and stakeholders to track when a cancelled project must be replaced with a new project. An example of this is shown with Project YYY in Table 2. The “Project Capacity – Proposed in Reporting Year (AF)” accounts for any replacement projects and additional capacity or projects needed to make up for projects that were downsized. This column must also equal the final project capacity goal (AF). The “Current Project Capacity (AF)” provides information about progress made in AF with completed projects, which is comparable to the final AF goal.

The “(Expected) Completion Date” and the determination of whether the project is “On Schedule (as Proposed in the WMP/EWMP)” give a permittee credit for work that is underway and allow the permittee to report whether it is complying with its own implementation schedule. The bottom section of Table 2 provides both interim and final deadlines and associated AF goals as determined through the Reasonable Assurance Analysis. Reporting this information in the Annual Report creates transparency by providing information critical to assessing compliance with a Program. This section of the table requires that permittees report whether they are in compliance with relevant requirements of the WMP or EWMP alternative compliance pathway.

The Regional Board should include a clear set of instructions, including definitions for each term in the table, to ensure that each permittee fills out the requested information in a consistent way. This table should be provided in such a way that the information can be sorted by each information item to facilitate project analysis. Appendix B contains the proposed table completed for the case of the Malibu Creek Watershed Management Group, based on the publicly available documents reviewed for this report. Many of the cells in this example table are blank because necessary information was lacking from the group’s Annual Report. We strongly recommend that the Regional Board adopt the transparent and accessible reporting framework proposed in this report (Table 2) for the 2020 MS4 Permit.

In addition to the table provided, the Annual Report must provide the limiting pollutant(s) for subwatersheds and an analysis of water quality trends based on CIMP data in a way that is transparent and accessible to all MS4 Permit stakeholders, including members of the public.

Project Status										
Jurisdiction	Name of Project	Type of Project	Subwatershed	Project Information	Status	Project Capacity - Proposed in WMP/EWMP (AF)	Project Capacity - Proposed in Reporting Year (AF)	Current Project Capacity (AF)	(Expected) Completion Date	On Schedule (as proposed in the WMP/EWMP)
XXX	XXX	XXX	XXX	Location/Lat-Long: Description: Total Project Cost: Funding Source: Community Benefits:	COMPLETED	### (projected)	### (actual)	### (actual)	MM/DD/YYYY	
~~YYY~~	~~YYY~~	~~YYY~~	~~YYY~~	~~Location/Lat-Long:~~ ~~Description:~~ ~~Total Estimated Project Cost:~~ ~~Funding Status:~~ ~~Community Benefits:~~	~~CANCELLED~~	~~###~~ ~~(projected)~~				
YYY	YYY	YYY	YYY	Location/Lat-Long: Description: Total Estimated Project Cost: Funding Status: Community Benefits:	CONSTRUCTION		### (projected)		MM/DD/YYYY	Y/N
ZZZ	ZZZ	ZZZ	ZZZ	Location/Lat-Long: Description: Total Estimated Project Cost: Funding Status: Community Benefits:	DESIGN	### (projected)	### (projected)		MM/DD/YYYY	Y/N
* should equal the sum of projected capacity for all projects listed, excluding cancelled projects ** should equal the sum of actual completed capacity for all completed projects				Final Project Capacity Goal	MET: Y/N	Final Goal* (AF):		Current Project Capacity**	YYYY	Y/N
				Most Recent Interim Project Capacity Goal	MET: Y/N	Interim Goal (AF):		Current Project Capacity**	YYYY	Y/N
				Next Interim Project Capacity Goal	MET: Y/N	Interim Goal (AF):		Current Project Capacity**	YYYY	Y/N

Table 2: *A template of the suggested reporting format for the 2020 MS4 Permit.*

Conclusion

Based on our assessment, much of Los Angeles County will be out of compliance with CWA requirements when interim and final TMDL deadlines pass. Project implementation has been very slow and cannot continue at this pace if water quality is to improve in our lifetimes. These deadlines were set many years ago, in some cases decades ago, to address water quality issues as quickly as possible while still providing permittees a reasonable amount of time to do so. Several permittees are in violation of deadlines that have already passed, and many more are not on track to meet upcoming deadlines. While we watch deadlines pass and wait for upcoming deadlines to approach, MS4-related pollution continues, with detrimental effects on human and ecological health. If more projects had been implemented in the six years between permit adoption and submittal of the most recent Annual Report in December 2018, more of the 18.82 inches of rain that fell in the 2018-2019 rain season would have been captured, treated, infiltrated or diverted, reducing discharge of polluted stormwater and increasing the region's water supply. This was a tremendous missed opportunity. TMDL deadlines must be met so that public and environmental health are protected.

An MS4 permit (in different variations) has been in place in the Los Angeles region since 1990. Cities and the County have been operating under these permits for nearly 30 years, and have now had nearly 7 years to develop and implement plans (e.g., WMPs, EWMPs, and green streets master plans) to achieve compliance under the 2012 Los Angeles County MS4 Permit. Permittees can no longer take incremental steps to achieve water quality goals. More must be done both on a large scale (regionally) and on a small scale (neighborhoods or individual parcels) to address stormwater and dry weather runoff pollution throughout Los Angeles County. Fortunately, permittees now have new funding opportunities for project implementation. Funding from the Safe, Clean Water Program (SCWP) will be allocated throughout Los Angeles County in Spring 2020, increasing available funding for stormwater projects by approximately $280 million *per year*.[9] This will more than double the annual amount spent by all permittees on stormwater projects in Los Angeles County since 12/28/12, and will allow the construction of new, multi-benefit stormwater capture projects.[10] These projects could significantly improve water quality throughout Los Angeles County, protecting both public and environmental health, while also providing additional benefits to Los Angeles communities such as new open space, air quality improvements, and climate resiliency. SCWP funds can be further leveraged with other sources, including Measure A (Los Angeles County Safe, Clean Neighborhood Parks and Beaches Protection), Measure M (Los Angeles County Traffic Improvement Plan), Measure H (Los Angeles County Homelessness Initiative), Proposition 1 (California State Stormwater Grant Program), and Proposition 68 (California State Parks, Environment, and Water Bond).

The MS4 Permit will be renewed again in 2020, providing an opportunity to fix the problems raised in this report. Our review of permittees' Annual Reports has made clear that the Regional Board must adopt a more transparent assessment process for the WMP and EWMP alternative compliance pathways. Assessment of progress under the WMP and EWMP programs should be based on current project capacity (AF) as a percentage of interim and final project capacity goals (AF). Currently, there is insufficient oversight of the minimal progress made under these alternative compliance pathways, and the lack of transparency allows permittees to fail to meet interim deadlines.

If permittees and the Regional Board are truly interested in increasing public participation in the MS4 Permit process and implementation of stormwater projects, information about all projects must be more accessible. The table provided in this report (Table 2) puts vital information in one

place so permittees can plan more efficiently, regulators and stakeholders can assess progress, and members of the public can understand what work is being done in their communities. This reporting format would allow Regional Board staff and public stakeholders to assess compliance progress without searching through thousands of pages of documents, save staff time and resources for both permittees and regulators, and allow NGOs to more effectively educate and engage Los Angeles communities in MS4 Permit implementation. Without the information contained in our proposed reporting framework, a comprehensive assessment of overall progress under WMPs and EWMPs is labor intensive and nearly impossible. It also lacks transparency in terms of project implementation.

With plans in place and new funding opportunities at hand, the Regional Board must approve a strong 2020 MS4 permit that is simple, measurable, enforceable, and accessible to ensure that meaningful implementation occurs in this next permit term. This is the only way to meet the Boards' goal of protecting public and environmental health from stormwater pollution. Assessing compliance under the WMP and EWMP alternative compliance pathways by project capacity (AF), and adopting the proposed reporting requirements (Table 2) will help to strengthen the 2020 MS4 Permit.

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Appendix A

Individual Enhanced Watershed Management Program (EWMP) Compliance Summaries

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BALLONA CREEK WATERSHED MANAGEMENT GROUP

Ballona Creek Watershed Management Area

The Ballona Creek Watershed Management Area is located in the Ballona Creek sub-Watershed in Central Santa Monica Bay. The Ballona Creek Watershed Management Group includes the Cities of Beverly Hills, Culver City, Inglewood, Los Angeles, Santa Monica, and West Hollywood; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-1).

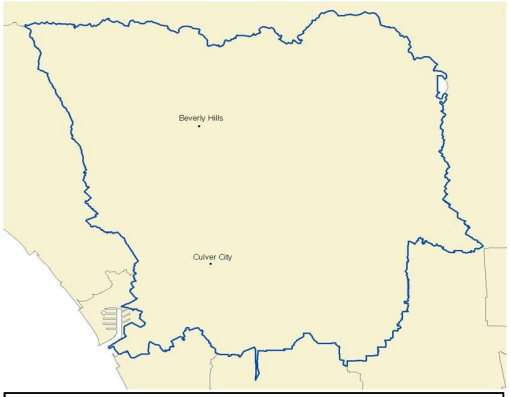

Figure A-1: *The Ballona Creek Watershed Management Area*

Water Quality in the Ballona Creek Watershed Management Area.

Waterbodies in the Ballona Creek Watershed Management Area are listed by the California State Water Resources Control Board (State Board) as impaired by trash, toxicity, fecal indicator bacteria (FIB), metals, dichlorodiphenyltrichloroethane (DDT), polychlorinated biphenyl (PCB), arsenic, sediment, invasive vegetation, habitat alteration, and hydromodification, among other contaminants.[1] At least eight Regional Total Maximum Daily Loads (TMDLs) apply to the Ballona Creek Watershed Management Area (Table A-1).

TMDL	TMDL Deadline											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	…	2025
BC Trash	80%	90%	97%	100%								
SMB Trash					20%	40%	60%	80%	100%			
Amended BC Toxics (1)		25%			50%	75%				100%		
Amended BC Toxics (2)					25%					50%		100%
Amended BC Metals (Dry)	50%		75%		100%							
Amended BC Metals (Wet)	25%				50%					100%		
BC Bacteria (Dry)		100%										
BC Bacteria (Wet)										100%		

Table A-1: *TMDL deadlines for Ballona Creek (BC) and the Santa Monica Bay (SMB) that are applicable in the Ballona Creek Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Ballona Creek Watershed Management Area will pass in 2025. However, the final AF goal must be achieved by 2021 to comply with the BC Bacteria (Wet) TMDL.

Permittees within the Ballona Creek Watershed Management Group are in violation of the 2013 Dry Weather Bacteria TMDL deadline. A total of 449 violations of the Ballona Creek Dry Weather Bacteria TMDL have been identified as of October 2017.[2] Additionally, water quality for some parameters may actually be declining in this watershed management area, particularly looking at wet weather FIB and at dissolved heavy metals during both dry and wet weather between 2012 and 2017.[3]

Progress towards Ballona Creek Watershed EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed In Reporting Year	742[4]	NA[5]	1[6]	374.72[7]	58.55[8]
Completed Since 12/28/12	2,406[9]	NA[10]	4[11]	763.5[12]	74.58[13]
Proposed	NA[14] (263 AF[15])	NA[16] (358 AF[17])	NA[18]	NA[19]	2,081[20]

** "Other Projects" is defined as green streets, regional projects, low flow diversions and other retrofits. This category does not include new/redevelopment projects.*

Table A-2: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Total Retention Capacity (AF)." See the endnotes on page A-7 for more detail about where each of these values was derived.

Regional Projects

A review of regional projects completed should be possible on the basis of the Annual Report, but the lack of necessary information about completed projects required some limited outside research. The Annual Report stated that seven "other projects" were completed since 12/28/12.[21] However, an internet search of the projects[22] revealed that two of these projects were completed prior to 12/28/12 (Mar Vista Rec. Center Stormwater Capture Project, completed in 2009; and Westside Water Quality Improvement Project, completed in 2006), and that two of these projects were actually two phases of one single project (Transfer Station Rain Garden, and Transfer Station Stormwater Capture and Diversion Project), leaving four total "other projects" actually completed since 12/28/12 (Table A-2). Of these four "other projects," two were likely regional projects (Transfer Station Rain Garden and Stormwater Capture and Diversion Project, and USC Rain Gardens). Therefore, two regional projects were completed since 12/28/12, one of which was completed in the reporting year, out of a total of 10 priority regional projects proposed in the EWMP (Figure A-2A).[23]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2016 Interim Retention Capacity Goal (AF)	2019 Interim Retention Capacity Goal (AF)	2021 Final Retention Capacity Goal (AF)	% Complete Towards 2016 Interim Goal	% Complete Towards 2019 Interim Goal	% Complete Towards 2021 Final Goal
74.58[13]	428[24]	1,136[25]	2,081[20]	17.43%[26]	6.57%[27]	3.58%[28]

Table A-3: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-3 to the 2016 and 2019 interim goals, and to the 2021 final goal, all derived from information in the EWMP. The percentage complete towards the 2016 and 2019 interim goals, and percentage complete towards the 2021 final goal are expressed visually in Figure A-2B. See the endnotes on page A-7 for more detail about where each of these values was derived.

Overall Progress towards Ballona Creek EWMP Goals

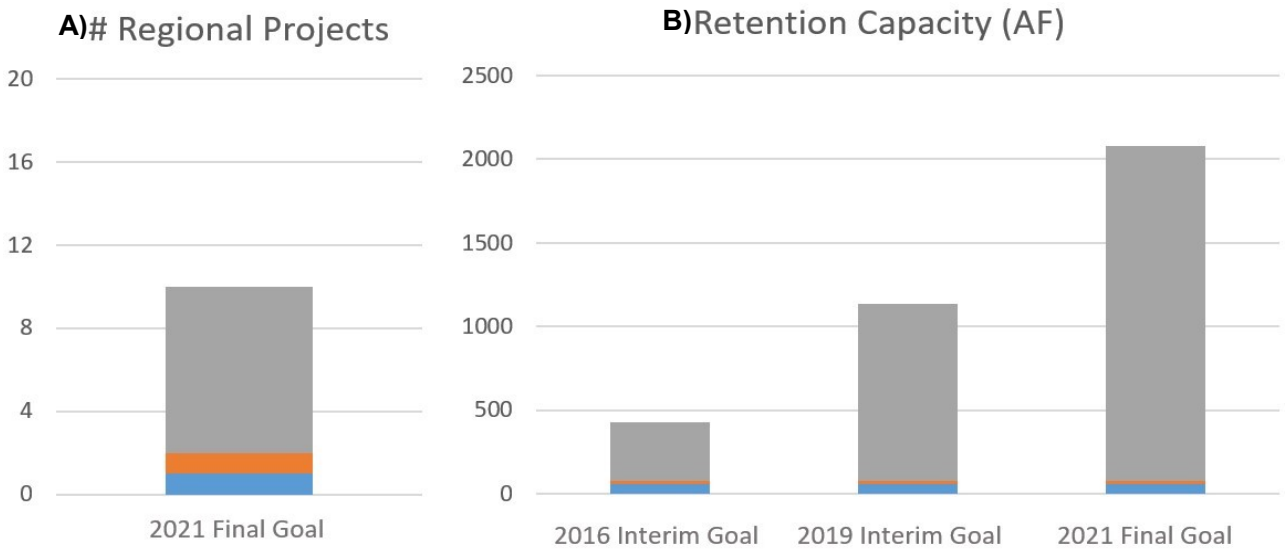

Figure A-2A: *Progress towards the final goal for number of regional projects completed.* One regional project was completed in the 2017-2018 reporting year (in blue). Two total regional projects were completed since 12/28/12 (in orange). A total of 10 priority regional projects were proposed in the EWMP, leaving eight to be completed by 2021 (in grey).
Figure A-2B: *Overall progress towards interim and final goals for total retention capacity (AF).* The Ballona Creek Watershed Management Group achieved a retention capacity of 58.55 AF in the 2017-2018 reporting year (in blue), for a total retention capacity of 74.58 AF since 12/28/12 (in orange). This falls short of the 2016 interim goal, and it leaves a retention capacity of 1,061.42 AF to be achieved by 2019 and a total retention capacity of 2,006.42 AF to be achieved by 2021 (in grey).

We attempted to assess progress based on the number of regional projects completed (Figure A-2A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” Second, these projects were listed by name in a narrative section of the Annual Report, but no additional information was provided, so outside research was necessary to understand the types of projects completed, and their completion date. And third, two of the projects reported were completed prior to 2012, and one was reported as two separate projects. These issues were only identified through the outside research conducted for this EWMP. Based on our review, with some limited outside research, we determined that two of ten originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

Therefore, our assessment of progress under the Ballona Creek EWMP was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Ballona Creek Watershed Management Group achieved a retention capacity of 74.58 AF since 12/28/12, which is 3.58% complete towards the 2021 final retention capacity goal of 2,081 AF (Table A-3, Figure A-2B). The Ballona Creek Watershed Management Group is out of compliance with its 2016 deadline. There remains a retention capacity of 1,061.42 AF to be achieved by the 2019 interim deadline and a total retention capacity of 2,006.42 AF to be achieved by the 2021 final deadline (Figure A-2B). If the current rate of implementation continues, the final 2021 EWMP goal will not be achieved until the year 2180 (Table 1), and the Ballona Creek Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Ballona Creek EWMP[29]

Project Name	Lead	Status	(Estimated) Completion Date
Ladera Park Regional Stormwater Capture Project	County of Los Angeles	Design	October 2019
La Cienega Park and Frank Fenton Field Retention/ Infiltration Regional Project	Cities of Beverly Hills, Los Angeles and West Hollywood	Planning	Spring 2019
Culver Boulevard Median Project	City of Culver City	Design	Winter 2020
Melrose Ave Complete Street Project	City of West Hollywood	Design	Winter 2018
Santa Monica Boulevard Green Streets Project	City of Beverly Hills	Construction	Fall 2021
Monteith Park & View Park Green Alley Stormwater Capture Project	County of Los Angeles	Design	Fall 2020
Westwood Neighborhood Greenway Project	City of Los Angeles	Pre-Design	Winter 2020
Burton Way Green Street Project	City of Beverly Hills	Design	Fall 2021
Vermont Avenue Stormwater Capture and Green Street Project	City of Los Angeles	Completion	Fall 2018
Baldwin Avenue Rain Garden	City of Culver City	Construction	2019
Centinela Avenue Hybrid Green Street Project	City Santa Monica and City of Los Angeles	Planning	Winter 2019
La Brea Green Street	City of Inglewood	Completion	(Not Reported)

Table A-4: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of planning, pre-design, design, and construction as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, the original expected completion date for the Melrose Avenue Complete Street Projects was Winter 2018; however, as of December 2018, this project was still in the Design phase, and we were not able to find an updated estimated completion date in the Annual Report. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Ballona Creek Watershed Management Group will do to improve this implementation rate.

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[2] Bell, Corinne. *Omission Accomplished II: The Lack of Municipal Stormwater Enforcement in the Los Angeles Region.* Natural Resources Defense Council. 2019. Available at: https://www.nrdc.org/sites/default/files/omission-accomplished-municipal-stormwater-enforcement-la-report.pdf

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[4] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 2, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[5] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 4, Table 5. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[6] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 2, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[7] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 2, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[8] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 2, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[9] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 3, Table 2. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[10] Ballona Creek Watershed Management Group Annual Report 2015/16 Reporting Year, page 6.
Ballona Creek Watershed Management Group Annual Report 2016/17 Reporting Year, page 13, Table 6.
Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 4, Table 5.
All available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[11] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 3, Table 2. Seven projects are reported, narrowed down through an internet search to four projects completed since 12/28/12 (Catch Basin Retrofits, Olympiad Drive Green Streets, USC Rain Gardens, and the Transfer Station Stormwater Capture and Diversion Project and Rain Garden [which is listed as two separate projects]). Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[12] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 3, Table 2. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[13] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 3, Table 2. This is likely an overestimate, including the retention capacity of the two regional projects reported that were completed prior to 12/28/12. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[14] Not specified in the EWMP. The goal was specified in AF (see Endnote 15), but not in number of projects completed.

[15] Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), page ES-9, Figure ES-10. This number is provided in the blue section of the graph for "Total LID BMPs" under the 2021 final deadline for bacteria. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

[16] Not specified in the EWMP. The goal was specified in AF (see Endnote 17), but not in miles completed.

[17] Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), page ES-9, Figure ES-10. This number is provided in the green section of the graph for "Green Streets" under the 2021 final

deadline for bacteria. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

[18] Not specified in the EWMP.

[19] Not Specified in the EWMP.

[20] Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), page ES-8, Figure ES-9. This number was calculated by adding all values of "Total Capacity" provided in bold, black print. This varies slightly from the sum total for the 2021 final deadline for bacteria from page ES-9, Figure ES-10, which is 2080 AF. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

[21] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year, page 3, Table 2. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[22] Ballona Creek Watershed Management Group EWMP Adaptive Management Report December 2018, page 8, Table 6. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[23] Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), pages 4-9 and 4-10, Table 4-1. This is the first approved draft of the EWMP for Ballona Creek. No updated drafts were submitted or approved since 2016. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf
Additional information is found in Appendix A, Attachments B, C, D, and E. This identifies an additional 285 project sites (27 Tier 1 project sites, 41 Tier 2 project sites, and 218 Tier 3 project sites). Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMPAppendices_2016Jan19.pdf

[24] Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), page ES-9, Figure ES-10. This number was calculated by adding all values for the 2016 interim deadline for metals (50%). Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

[25] Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), page ES-9, Figure ES-10. This number was calculated by adding all values for the 2019 interim deadline for metals (75%). Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

[26] =(74.58/428)*100%

[27] =(74.58/1,136)*100%

[28] =(74.58/2,081)*100%

[29] Ballona Creek Watershed Management Group Annual Report 2017/18 Reporting Year. Attachment 5: Status of Multi-Year Efforts. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
Additional information found in the Enhanced Watershed Management Program for the Ballona Creek Watershed (Jan., 2016), pages 4-9 and 4-10, Table 4-1. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/ballona_creek/BallonaCreek_RevisedEWMP_corrected2016Feb1.pdf

BEACH CITIES WATERSHED MANAGEMENT GROUP

Beach Cities Watershed Management Area

The Beach Cities Watershed Management Area is located along the Pacific Coast in South Santa Monica Bay within the Santa Monica Bay Watershed. The Beach Cities Watershed Management Group includes the Cities of Hermosa Beach, Manhattan Beach, Redondo Beach, and Torrance; and the Los Angeles County Flood Control District (Figure A-3).

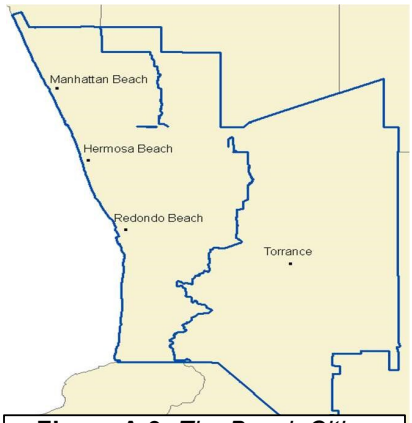

Figure A-3: *The Beach Cities Watershed Management Area*

Water Quality in the Beach Cities Watershed Management Area

Waterbodies in the Beach Cities Watershed Management Area are listed by the State Board as impaired by trash/debris, toxicity, FIB, metals, DDT, PCB, arsenic, sediment, invasive exotic vegetation, habitat alteration, and hydromodification, among other contaminants.[30] At least six Regional TMDLs apply to the Beach Cities Watershed Management Area (Table A-5).

TMDL	TMDL Deadline															
	2012	..	2016	2017	2018	2019	2020	2021	2022	2023	…	2025	…	2027	…	2032
SMB Bacteria (dry)	100%															
SMB Bacteria (wet)					50%			100%								
DC/DCE Bacteria (dry)										50%		100%				
DC/DCE Bacteria (wet)									25%					50%		100%
SMB Trash			20%	40%	60%	80%	100%									
DC Toxics																100%

Table A-5: *TMDL deadlines for the Santa Monica Bay (SMB), the Dominguez Channel (DC), and the Dominguez Channel Estuary (DCE) that are applicable in the Beach Cities Watershed Management Area*. The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Beach Cities Watershed Management Area will pass in 2032. However, all contaminants discharged in the Santa Monica Bay Watershed portion of the Beach Cities Watershed Management Area must be addressed by 2021.

Permittees within the Beach Cities Watershed Management Group are in violation of the 2012 Santa Monica Bay Dry Weather Bacteria TMDL deadline, as there have been dry weather violations reported in Manhattan Beach, Hermosa Beach, and Redondo Beach from December 2012 through October 2017.[31] These violations are reflected in Heal the Bay's Beach Report Card. For dry weather, many beaches in this area do receive good grades (A or B), but some still receive lower grades (C, D or F).[32] For annual wet weather, Torrance Beach experienced an improvement in water quality from 2011 to 2013, but then a decrease in water quality grades from an A in 2013 to a C in 2017.[33] Redondo State Beach experienced a similar decrease in water quality during the same time frame, and Hermosa Beach and Manhattan Beach have consistently received a grade of F during wet weather.[33]

Progress towards Beach Cities Watershed EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed In Reporting Year	47[34]	NA[35]	0[36]	6.56[37]	0.26[38]
Completed Since 12/28/12	204[39]	NA[40]	4[41]	1,665.49[42]	84.44[43]
Proposed (By 2021)	NA[44]	NA[45] (18.61 AF[46])	NA[47]	NA[48]	1,460.8[i, 49]

** "Other Projects" is not defined. For the purpose of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-6: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Total Retention Capacity (AF)." A 2032 final AF goal for the Beach Cities Watershed Management Group was not provided in the EWMP, so this review was for the 2021 interim deadline to reduce polluted discharge in the Santa Monica Bay Watershed portion of the Beach Cities Watershed Management Area.

Regional Projects

A review of regional projects completed should be possible on the basis of the Annual Report, but the lack of necessary information about completed projects required some limited outside research. The Annual Report stated that four "other projects" were completed since 12/28/12.[41] An internet search of each project[50] revealed that two regional projects were completed since 12/28/12 (Henrietta/Amie/ Entradero Basins, and the Manhattan Beach Greenbelt Infiltration Project), and none were completed in the reporting year. Therefore, two regional projects were completed since 12/28/12, neither of which were completed in the reporting year, out of a total of six regional projects proposed in the EWMP (Figure A-4A).[51]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2021 Interim Retention Capacity Goal (AF)	% Complete Towards 2021 Interim Goal	Total % Load Reduction Since 12/28/12	2018 Interim % Target Load Reduction
84.44[43]	1,460.8[49]	5.78%[52]	13.6%[53]	13%[54]

Table A-7*: Assessment by retention capacity (AF)*. The total retention capacity completed since 12/28/12, reported in the Annual Report, is compared in Table A-7 to the 2021 interim goal to address all TMDLs in the Santa Monica Bay Watershed portion of the Ballona Creek Watershed Management Area because a final 2032 goal was not listed in the EWMP. The percentage complete towards the 2021 interim goal is expressed visually in Figure A-4B. The Beach Cities Watershed Management Group self-reported that they have achieved a 13.6% load reduction, which brings them into compliance with the 2018 interim deadline set at 13% load reduction. However, no additional data is provided in the Annual Report to support this determination. See the endnotes on page A-13 for more detail about where each of these values was derived.

[i] This value only accounts for the area within the Santa Monica Bay Watershed, and not the area that falls within the Dominguez Channel Watershed, and so it is the goal for the 2021 interim deadline.

Overall Progress towards Beach Cities EWMP Goals

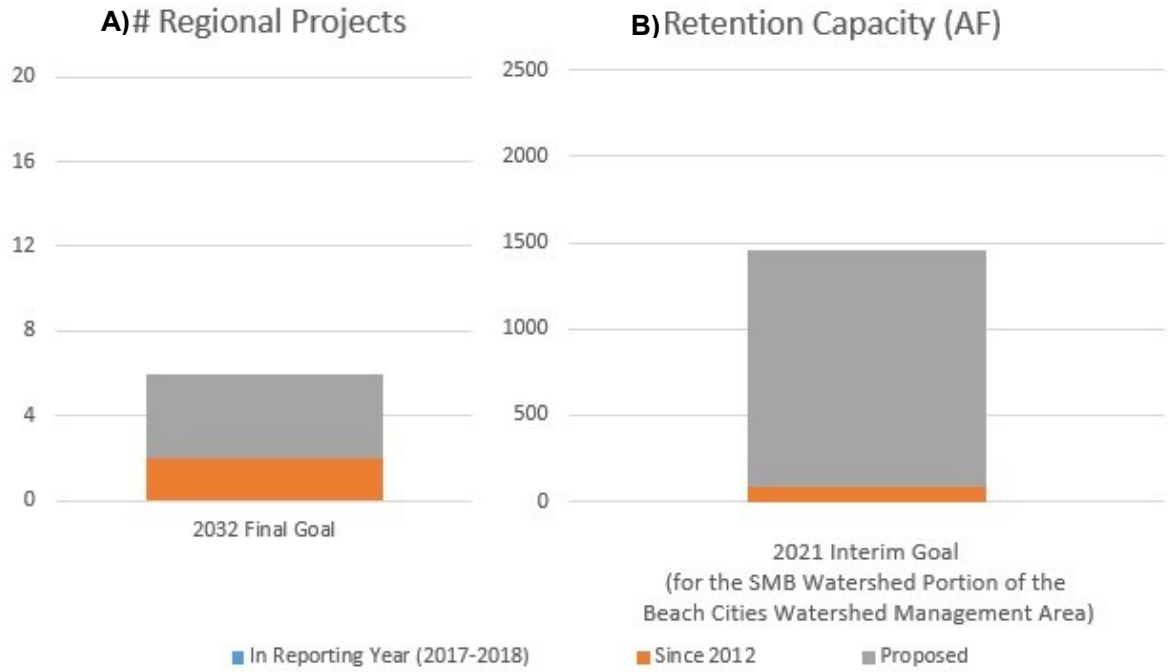

Figure A-4A: *Progress towards the final goal for number of regional projects completed*. No regional projects were completed in the 2017-2018 reporting year. Two total regional projects were completed since 12/28/12 (in orange). A total of six regional projects were proposed in the EWMP, leaving four to be completed by 2032 (in grey).
Figure A-4B: *Overall progress towards the interim goal for total retention capacity (AF)*. The Beach Cities Watershed Management Group achieved a retention capacity of 0.26 AF in the 2017-2018 reporting year (in blue, though this low number is not visible in Figure A-4B), for a total retention capacity of 84.44 AF since 12/28/12 (in orange). This leaves a retention capacity of 1,376.36 AF to be achieved by 2021 (in grey). A 2032 final AF goal for the Beach Cities Watershed Management Group was not provided in the EWMP.

We attempted to assess progress based on the number of regional projects completed (Figure A-4A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” Second, these projects were listed by name in a narrative section of the Annual Report, but no additional information was provided, so outside research was necessary to understand the types of projects completed and their completion date. Based on our review, with some limited outside research, we determined that two of six originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

Therefore, our assessment of progress under the Beach Cities EWMP was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Beach Cities Watershed Management Group achieved a retention capacity of 84.44 AF since 12/28/12, which is 5.78% complete towards the 2021 interim goal of 1,460.8 AF (Table A-7, Figure A-4B). This leaves a retention capacity of 1,376.36 AF to be achieved by the 2021 interim deadline. If the current rate of implementation continues, the 2021 interim goal will not be achieved until the year 2116 (Table 1), and the Beach Cities Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution. It is unclear how long it will take to achieve compliance with the final goal, since we were unable to identify a 2032 final AF goal.

Status of Multi-Year Projects for the Beach Cities EWMP[55]

Project Name	Participating Permittees	Status	(Estimated) Completion Date
Herondo Storm Drain Infiltration Project	Redondo Beach, Torrance, Manhattan Beach, Hermosa Beach	Design Reviewed	2021
Hermosa Beach Infiltration Trench	Redondo Beach, Torrance, Manhattan Beach, Hermosa Beach	Potential Vulnerability to Sea Level Rise completed	2021
Redondo Beach Park #3 Infiltration	Redondo Beach, Torrance, Manhattan Beach, Hermosa Beach	(Not Reported)	2021
Manhattan Beach Infiltration Trench	Manhattan Beach	Funding Phase	2021
Power line Easement Filtration	Redondo Beach, Manhattan Beach	Not Started	2023
Artesia & Hawthorne Blvd Filtration	Redondo Beach	Not Started	2025
Alondra Park Regional Project	Redondo Beach, Torrance, Manhattan Beach	Preliminary Design	2026
Distributed Green Streets	Redondo Beach, Torrance, Manhattan Beach, Hermosa Beach	Grant application submitted	2021
Distributed Green Streets	Manhattan Beach	Grant application submitted	2021
Analysis Region DC-MB/RB	Redondo Beach, Manhattan Beach	Conceptual green street locations identified	3% by 2021
			4% by 2026
			7% by 2031
Catch Basin Inlet Filters and/or Drywells	Torrance	(Not Reported)	2020-2032
Hermosa Beach Greenbelt	Hermosa Beach	(Not Reported)	(Not Reported)

Table A-8: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of design or funding as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently for multi-year projects. For example, the Redondo Beach Park #3 Infiltration project was expected to be completed in 2021, but the Annual Report did not list an updated status. The current rate of implementation is insufficient to reach the 2021 interim AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Beach Cities Watershed Management Group will do to improve this implementation rate.

[30] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

[31] Bell, Corinne. *Omission Accomplished II: The Lack of Municipal Stormwater Enforcement In the Los Angeles Region.* Natural Resources Defense Council. 2019. Available at: https://www.nrdc.org/sites/default/files/omission-accomplished-municipal-stormwater-enforcement-la-report.pdf

[32] Heal the Bay. *Heal the Bay 2018-2019 Beach Report Card.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/06/BRC_2019_FINAL2.pdf

[33] *Beach Report Card with NowCast.* Heal the Bay. 2018 Beach Report Card. Available at: https://www.beachreportcard.org

[34] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[35] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 6, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[36] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[37] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[38] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[39] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[40] No Green Streets projects were reported.

[41] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[42] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[43] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, page 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[44] Not specified in the EWMP.

[45] Not specified in the EWMP. The goal was specified in AF (see Endnote 46), but not in miles completed.

[46] Enhanced Watershed Program for the Beach Cities Watershed Management Area (Mar. 2018), page ES-13, Table ES-5. All projects designated as distributed green streets projects, listed with "Design Storage Volume (cu-ft.)," were added up and converted to AF. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/beach_cities/BeachCities_EWMP_March%202018.pdf

[47] Not specified in the EWMP.

[48] Not specified in the EWMP.

[49] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, pages 20-21, Table 3a: "Santa Monica Bay Watershed – Storm Water Control Measure Implementation." This number is the total AF from the "Critical Year Annual Runoff Volume Retained Target." Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[50] Adaptive Management Report for the Beach Cities Enhanced Watershed Management Plan (Dec. 2018), page 2-9. Projects are listed by name. An internet search was therefore possible, and was necessary to understand the types of projects completed. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[51] Enhanced Watershed Program for the Beach Cities Watershed Management Area (Mar. 2018), page 4-8, Figure 4-1. 11 projects are listed, six of which are regional projects (Manhattan Beach Infiltration Trench, Hermosa Beach Greenbelt Infiltration, Hermosa Beach Infiltration, Redondo Beach Park #3, Redondo Beach Power line Easement Filtration, and Artesia Boulevard and Hawthorne Boulevard Filtration). Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/beach_cities/BeachCities_EWMP_March%202018.pdf

[52] =(84.44/1,460.8)*100%

[53] Adaptive Management Report for the Beach Cities Enhanced Watershed Management Plan (Dec. 2018), page 2-9, Table 2-4. This document does not indicate what pollutant load is being reduced. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[54] Adaptive Management Report for the Beach Cities Enhanced Watershed Management Plan (Dec. 2018), page 2-9, Table 2-4. This document does not indicate what pollutant load is being reduced. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[55] Beach Cities Watershed Management Group Annual Watershed Report, Reporting Year 2017-18, pages 7 - 9. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html Additional information found in Enhanced Watershed Program for the Beach Cities Watershed Management Area (Mar. 2018), page 4-8, Figure 4-1. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/beach_cities/BeachCities_EWMP_March%202018.pdf

DOMINGUEZ CHANNEL WATERSHED MANAGEMENT GROUP

Dominguez Channel Watershed Management Area

The Dominguez Channel Watershed Management Area is located in southern Los Angeles County spanning the area just east of South Santa Monica Bay and the Palos Verdes Peninsula down to the Pacific Coast at the Los Angeles Harbor. The Dominguez Channel Watershed Management Group includes the Cities of Carson, El Segundo, Hawthorne, Inglewood, Lawndale, Lomita and Los Angeles; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-5).

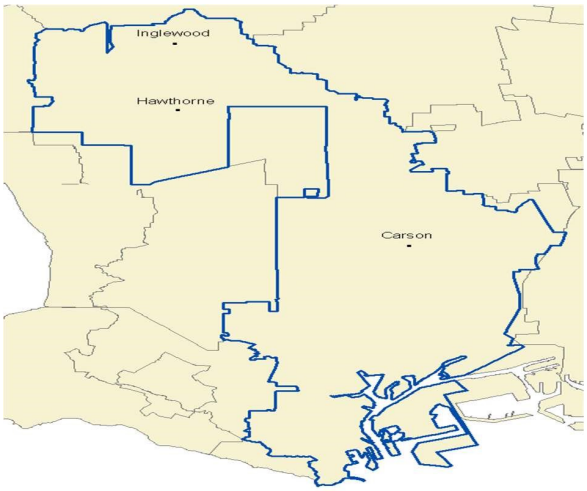

Figure A-5: *The Dominguez Channel Watershed Management Area*

Water Quality in the Dominguez Channel Watershed Management Area

Waterbodies in the Dominguez Channel Watershed Management Area are listed by the State Board as impaired by ammonia, diazinon, trash, zinc, copper, and lead, among other contaminants.[56] At least five Regional TMDLs apply to the Dominguez Channel Watershed Management Area (Table A-9).

TMDL	TMDL Deadline												
	2014	2015	2016	…	2018	2019	2026	…	2029	…	2032	…	2040
Machado Lake Trash	60%	80%	100%										
Machado Lake Nutrient					100%								
Machado Lake Pesticides / PCBs						100%							
Harbor Toxics							50%		75%		100%		
Machado Lake Bacteria													100%

Table A-9: *TMDL deadlines for the LA Harbor and Machado Lake that are applicable in the Dominguez Channel Watershed Management Area*. The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a contaminant. The final deadline for the Dominguez Channel Watershed Management Area will pass in 2040, but all projects must be completed by 2032 to achieve compliance with the Harbor Toxics TMDL.

Between 2012 and 2017, FIB levels decreased during dry weather in the Dominguez Channel Watershed Management Area, but increased during wet weather.[57] Although FIB beach water quality sampling is not conducted directly at the Port of Long Beach, surrounding beaches consistently receive F grades during wet weather, including a chronic Beach Bummer,[ii] Inner Cabrillo Beach.[58] Additionally, the concentrations for many heavy metals including aluminum, lead, copper, and zinc increased in both dry and wet weather from 2002 to 2017.[57]

[ii] Beach Bummers are the top 10 most polluted beaches in terms of FIB levels reviewed under Heal the Bay's Beach Report Card.[58]

Progress towards Dominguez Channel Watershed EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed In Reporting Year	73[59] (4.18 AF[60])	0.0[61]	0[62]	53.02[63]	4.18[64]
Completed Since 12/28/12	227[65]	NA[66] (2.74 AF[67])	15[68]	27,293.54[69]	771.39[70]
Proposed	NA[71] (116.8 AF[72])	403[73] (294.2 AF[74])	NA[75]	NA[76]	1,284.30[77]

** "Other Projects" is not defined. For the purpose of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-10: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Total Retention Capacity (AF)." See the endnotes on page A-19 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that 15 "other projects" were completed since 12/28/12,[68] but regional projects were not reported separately in the Annual Report. It was clear in the narrative section of the Annual Report that one or more regional projects were completed in the Machado Lake area; however, not enough information was provided about these projects to complete additional research or to identify an accurate count of the number of regional projects completed. Based on the information provided, we were unable to determine how many regional projects were completed since 12/28/12, or if any were completed in the reporting year. A total of 12 regional projects were proposed in the EWMP.[78]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2017 Interim Retention Capacity Goal (AF)	2026 Interim Retention Capacity Goal (AF)	2032 Final Retention Capacity Goal (AF)	% Complete Towards 2026 Interim Goal	% Complete Towards 2032 Final Goal
771.39[70]	1[79]	459.47[80]	1,284.30[77]	167.89%[81]	60.06%[82]

Table A-11: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-11 to the 2017 interim goal, the 2026 interim goal, and the 2032 final goal, all derived from information in the EWMP. The percentage complete towards the 2017 and 2026 interim goals, and the percentage complete towards the 2032 final goal are expressed visually in Figure A-6. See the endnotes on page A-19 for more detail about where each of these values was derived.

Overall Progress towards Dominguez Channel EWMP Goals

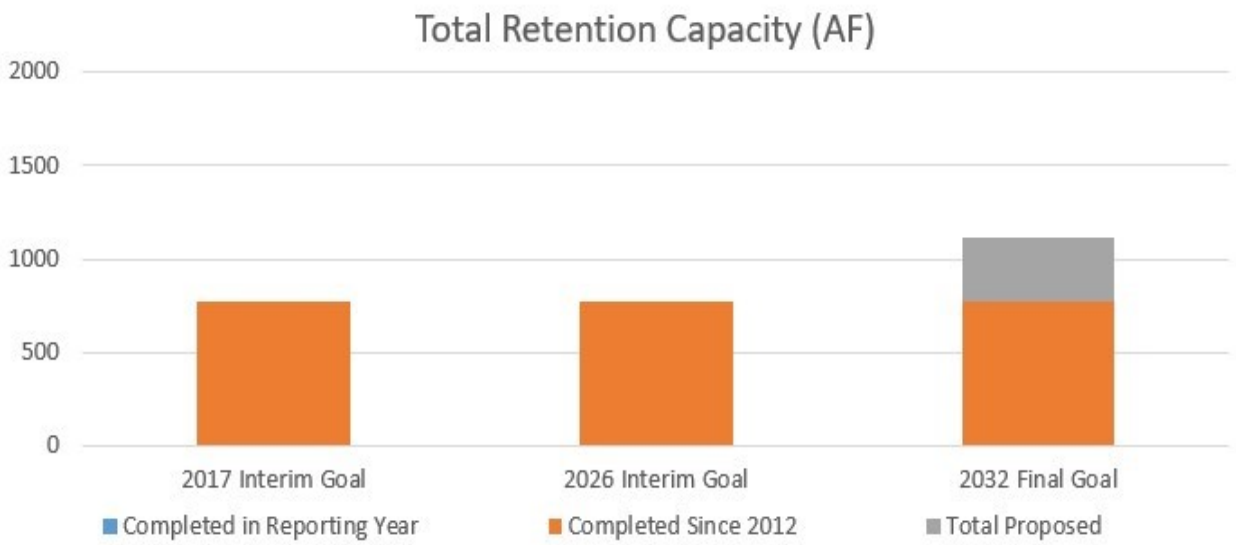

Figure A-6: *Overall progress towards interim and final goals for total retention capacity (AF).* The Dominguez Channel Watershed Management Group achieved a retention capacity of 4.18 AF in the 2017-2018 reporting year (in blue, though this small number is not visible in Figure A-6), for a total retention capacity of 771.39 AF since 12/28/12 (in orange). This leaves a retention capacity of only 512.91 AF to be achieved by 2032 (in grey).

We attempted to assess progress based on the number of regional projects completed, but this was not possible for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” Second, there was no full discussion in any narrative section of the submitted documents that explains all of the regional projects completed in the Dominguez Channel Watershed Management Area. There was reference to projects completed in the Machado Lake area, indicating that there were regional projects completed. However, without sufficient information and a full list of completed projects, further assessment based on regional projects completed was not possible.

Therefore, our assessment of progress under the Dominguez Channel EWMP was based on retention capacity (AF) and not the number of regional projects completed. The Dominguez Channel Watershed Management Group is the only group on track to achieve its EWMP goals before its final deadline passes. As of December 2018, the Dominguez Channel Watershed Management Group achieved a retention capacity of 771.39 AF since 12/28/12, which surpasses the 2017 and 2026 interim goals, and is 60.06% complete towards the 2032 final goal of 1,284.30 AF (Table A-11, Figure A-6). The Dominguez Channel Watershed Management Group is currently in compliance with the 2017 interim deadline and the upcoming 2026 interim deadline. There remains a retention capacity of only 512.91 AF to be achieved by 2032. If the current rate of implementation continues, final 2032 EWMP compliance will be achieved by the year 2022 (Table 1).

From the information provided in the Annual Report and supplemental documents, this rate of implementation was achieved in large part due to multi-benefit regional projects completed in the Machado Lake area.

Status of Multi-Year Projects for the Dominguez Channel EWMP[83]

Project Name	Lead	Status	(Estimated) Completion Date
Machado Lake Ecosystem Rehabilitation	City of LA	Construction	Apr-17
Harbor City Regional BMP	City of LA, Lomita, County	Preliminary Planning; Working towards meeting near-term predesign milestones	2034
Chester Washington Golf Course Regional BMP	City of LA, County	Preliminary Planning; Working towards meeting near-term predesign milestones	Near-term pre-design milestones: December 2017
Wilmington Recreational Center Regional BMP	City of LA	Preliminary Planning; Working towards meeting near-term predesign milestones	Near-term pre-design milestones: December 2017
Averill Park Regional BMP	City of LA	Preliminary Planning; Working towards meeting near-term predesign milestones	Near-term pre-design milestones: December 2017
Carson Stormwater and Runoff Capture Project at Carriage Crest Park	City of Carson, County of Los Angeles	90% Plans currently being reviewed , to be advertised in 2017 and awarded for construction in March 2018	Dec-19
Alondra Park	County of Los Angeles, Hawthorne, Lawndale, El Segundo	Preliminary design report is to be completed in spring 2018	Near-term pre-design milestones: Spring 2018, completion 2026
Century Boulevard Green Street	Inglewood	currently under construction	2019
Center Park	Inglewood	currently under construction	Nov-17
Darby Park	Inglewood	Preliminary Planning pursuing funding opportunities	2026
Harbor City Regional BMP	City of LA, Lomita, County	Preliminary Planning; Working towards meeting near-term predesign milestones	2034

Table A-12: *A summary of the status of multi-year projects as of December 2018.*

The Dominguez Channel Watershed Management Group is currently on track to reach its final AF goal, with additional projects pending. Projects listed with a status of planning, design, and construction as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, Center Park had an original estimated date of completion in 2017. As of December 2018, it was still under construction, and we were unable to identify a new estimated date of completion. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached if these additional projects are completed. Considering the current rate of implementation, the Dominguez Channel Watershed Management Group is on track to reach water quality goals before its final deadline passes. However, the current reporting format does not provide enough information to determine if the implementation rate is expected to continue.

[56] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

[57] Eisenhardt L. and Mueller S. *Los Angeles County Municipal Separate Storm Sewer System (MS4) Time Series Analysis, 2002-2015 [report].* [Santa Barbara, CA]: Bren School of Environmental Science and Management, University of California Santa Barbara; 2018.

[58] Heal the Bay. *Heal the Bay 2018-2019 Beach Report Card.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/06/BRC_2019_FINAL2.pdf

[59] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[60] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-4, Table 2a. Since no "other projects" were completed in the reporting year, it was assumed that the "Total Retention Capacity of Projects" referred to the capacity achieved through new/redevelopment projects. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[61] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-8, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[62] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[63] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[64] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[65] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[66] Not reported.

[67] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-21, Table 3. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[68] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[69] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[70] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, page C-6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[71] Not specified in the EWMP. The goal was specified in AF (see Endnote 72), but not in number of projects completed.

[72] Dominguez Channel Watershed Group Enhanced Watershed Management Program (Feb. 2016), page 5-5, Table 5.2. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/dominguez_channel/DCWMG_EWMP_2-25-15.pdf

[73] Dominguez Channel Watershed Group Draft Enhanced Watershed Management Program (Jun. 2015), page 5-2, Table 5-2. This value was calculated by adding up the numbers of "Lane Miles of Green Streets" for the years 2026-2032. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/dominguez_channel/DCWMG_EWMPBody.pdf
[74] Dominguez Channel Watershed Group Enhanced Watershed Management Program (Feb. 2016), page 5-5, Table 5.2. A value of 294.2 AF was reported as the total, although adding up all of the individual numbers reported resulted in a value of 294.1 AF. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/dominguez_channel/DCWMG_EWMP_2-25-15.pdf
[75] Not specified in the EWMP.
[76] Not specified in the EWMP.
[77] Dominguez Channel Watershed Group Enhanced Watershed Management Program (Feb. 2016), page 5-5, Table 5.2. This number is the "24-hour Volume Managed (acre-feet)." Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/dominguez_channel/DCWMG_EWMP_2-25-15.pdf
This number conflicted with the number reported in the latest Annual Report, 920.17 AF, calculated by adding the 50% targets and the 31% targets and multiplying them by two and 3.22, respectively. Dominguez Channel Watershed Management Group Annual Report 17/18 Reporting Year, pages C-19- C-21, Table 3. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[78] Dominguez Channel Watershed Group Enhanced Watershed Management Program (Feb. 2016), pages 4-16 and 4-17, Table 4.8. 12 projects were listed: Chester Washington Golf Course (North), Chester Washington Golf Course South, Jim Thorpe Park, Ramona Park, Hawthorne Memorial Park, Darby Park, Harbor City Park, Averill Park, Wilmington Recreation Center. Carson and Lawndale added: Alondra Park, Carriage Crest Park, and City Hall/Civic Center. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/dominguez_channel/DCWMG_EWMP_2-25-15.pdf
[79] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, pages C-20, Table 3. The only 2017 milestone required a retention capacity of 1 AF. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[80] Dominguez Channel Watershed Group Annual Report 2017/18 Reporting Year, Appendix C, pages C-20 and C-21, Table 3. This number was the "Total Target" value reported for all milestones through the 2026 interim deadline. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[81] =(771.39/459.47)*100%
[82] =(771.39/1,112.3)*100%
[83] Dominguez Channel Watershed Group Enhanced Watershed Management Program (Feb. 2016). Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/dominguez_channel/DCWMG_EWMP_2-25-15.pdf

MALIBU CREEK WATERSHED MANAGEMENT GROUP

Malibu Creek Watershed Management Area

The Malibu Creek Watershed Management Area is located within the Malibu Creek Watershed in North Santa Monica Bay. The northern boundary of the Malibu Creek Watershed Management Area is the boundary between Los Angeles County and Ventura County. The Malibu Creek Watershed Management Group includes the cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-7).

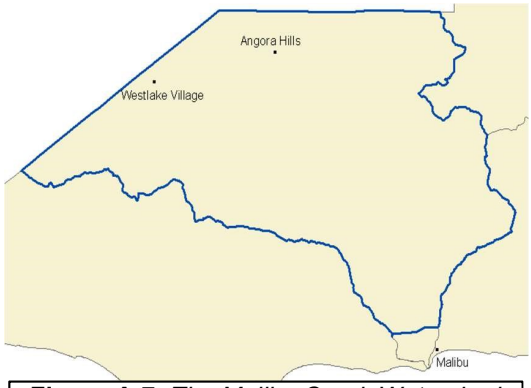

Figure A-7: *The Malibu Creek Watershed Management Area*

Water Quality in the Malibu Creek Watershed Management Area

Waterbodies in the Malibu Creek Watershed Management Area are listed by the State Board as impaired by phosphorus, nitrogen, DDT, PCB, ammonia, lead, selenium, mercury, and chlorophyll, among other contaminants.[84] At least eight Regional TMDLs apply to the Malibu Creek Watershed Management Area (Table A-13).

TMDL	TMDL Deadline											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	...	2032
MCW Nutrients						100%						
MC and Lagoon Sedimentation and Nutrients												100%
SMB Trash					20%	40%	60%	80%	100%			
SMB Bacteria (Dry)	100%											
SMB Bacteria (Wet)							50%			100%		
MCW Trash		20%	40%	60%	80%	100%						
MCW Bacteria (Dry)	100%											
MCW Bacteria (Wet)							50%			100%		

Table A-13: *TMDL deadlines for the Malibu Creek (MC), the Malibu Creek Watershed (MCW), and the Santa Monica Bay (SMB) that are applicable in the Malibu Creek Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Malibu Creek Watershed Management Area will pass in 2032.

The Malibu Creek Watershed Management area has seen an increase in the concentrations of aluminum and lead during dry weather, and in aluminum, lead, copper, and zinc during wet weather from 2002-2017.[85] FIB has decreased during dry weather between 2013 and 2017.[85] This decreasing trend can also be seen in Heal the Bay's 2018 River Report Card. In 2017, 75% of samples in the Malibu Creek Watershed showed FIB exceedances, dropping to 50% in 2018.[86] However, with 50% of samples showing FIB exceedances, it is clear that exceedances are still occurring during dry weather, placing public health at risk.[86]

Progress towards Malibu Creek Watershed EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed in Reporting Year	1[87]	0.097[88]	2[89]	5[90]	0.25[91]
Completed Since 12/28/12	17[92]	NA[93]	1[94]	4,047.63[95]	0.35[96]
Proposed	NA[97]	NA[98] (49.3 AF)[99]	NA[100]	NA[101]	96.3[102]

** "Other Projects" is not defined. For the purpose of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-14: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Total Retention Capacity (AF)." See the endnotes on page A-25 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that one "other project" was completed since 12/28/12,[94] but regional projects were not reported separately in the Annual Report. Therefore, we were unable to determine whether any regional projects were completed in the Malibu Creek Watershed Management Area since 12/28/12. No list of projects was provided in the narrative section of the Annual Report, so an internet search for the one "other project" was not possible. Based on our review, no regional projects were completed since 12/28/12 and, therefore, no regional projects were completed in the reporting year; a total of eight regional projects were proposed in the EWMP (Figure A-8A).[103]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2017 Interim Retention Capacity Goal (AF)	2021 Interim Retention Capacity Goal (AF)	2032 Final Retention Capacity Goal (AF)	% Complete Towards 2017 Interim Goal	% Complete Towards 2021 Interim Goal	% Complete Towards 2032 Final Goal
0.35[96]	12.0[104]	95.7[105]	96.3[102]	2.92%[106]	0.37%[107]	0.36%[108]

Table A-15: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-15 to the 2017 and 2021 interim goals, and to the 2032 final goal, all derived from information in the EWMP. The percentage complete towards the 2017 and 2021 interim goals, and percentage complete towards the 2032 final goal are expressed visually in Figure A-8B. See the endnotes on page A-25 for more detail about where each of these values was derived.

Overall Progress towards Malibu Creek EWMP Goals

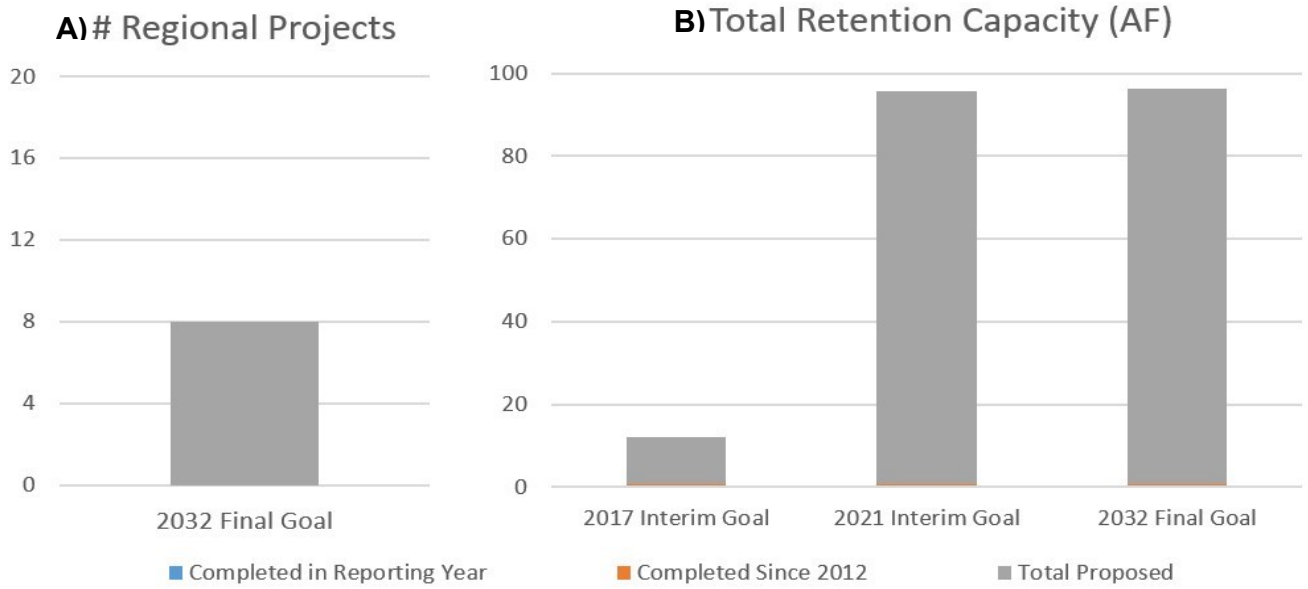

Figure A-8A: *Progress towards the final goal for number of regional projects completed*. No regional projects were completed in the 2017-2018 reporting year, or since 12/28/12. A total of eight were proposed in the EWMP, leaving all eight to be completed by 2032 (in grey).
Figure A-8B: *Overall progress towards interim and final goals for total retention capacity (AF)*. The Malibu Creek Watershed Management Group achieved a retention capacity of 0.25 AF in the 2017-2018 reporting year (in blue, though this small number is not visible in Figure A-8B), for a total retention capacity of 0.35 AF since 12/28/12 (in orange). This leaves a retention capacity of 95.35 AF to be achieved by 2021, and a total retention capacity of 95.95 AF to be achieved by 2032 (in grey).

We attempted to assess progress based on the number of regional projects completed (Figure A-8A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” Second, these projects were not listed in any narrative section of the documents reviewed for this report, and with no additional information, outside research was not possible. Based on our review, we determined that zero of eight originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

Therefore, our assessment of progress under the Malibu Creek Watershed Management Group was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Malibu Creek Watershed Management Group achieved a retention capacity of 0.35 AF since 12/28/12, which is 0.36% complete towards the 2032 final retention capacity goal of 96.3 AF (Table A-15, Figure A-8B). The Malibu Creek Watershed Management Group is out of compliance with the 2017 interim deadline. There remains a retention capacity of 95.35 AF to be achieved by 2021 and a total retention capacity of 95.95 AF to be achieved by 2032. If the current rate of implementation continues, the final 2032 EWMP goal will not be achieved until the year 3663 (Table 1), and the Malibu Creek Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes in 2032, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Malibu Creek EWMP[109]

Project Name	Lead	Status	(Estimated) Completion Date
Las Virgenes Creek Restoration Project – Phase II	Calabasas	Phase I completed. Phase II being implemented. Design work has been completed; construction is in progress.	Fall 2018
Citywide Green Streets Project	Calabasas	Initiated planning phase of the Citywide Green Streets Project in February 2016. One bio-filtration medians has been constructed on Malibu Hills Road. Las Virgenes Road and Malibu Hills Road Phase II are currently in design phase.	Dependent on funding; Late 2019/Early 2020
Gates Canyon Park (LVC-14)	Los Angeles County and Calabasas	Design plans complete. The project has been awarded a $3.3M Prop 1 grant.	Summer 2019
Mulholland Hwy at Careful et Al Super Green Streets	Los Angeles County	Project is in Development Concept Phase	February 2021
Wagon Road Low Flow Diversion	Los Angeles County	Project is in Development Concept Phase	October 2020
Ridgeford Project (TC-37)	Westlake Village	Feasibility study to be completed by end of 2018/19	(Not Reported)
Lindero Linear Park Project	Westlake Village	Phase 1 construction commenced Sept. 2018	March 2019
Reyes Adobe Green Street Project	Agoura Hills	Pursuing funding	Dependent on Funding
County Yard Treatment Facility	Agoura Hills and Los Angeles County	Pursuing funding	May 2021
TC-35 Infiltration basin within Three Springs Park	Westlake Village	(Not Reported)	(Not Reported)

Table A-16: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of pursuing funding, concept, design, or construction as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, Las Virgenes Creek Restoration – Phase II had an estimated completion date of Fall 2018. As of December 2018, it was in the construction phase, but we were not able to find an updated estimated completion date in the Annual Report. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Malibu Creek Watershed Management Group will do to improve this implementation rate.

[84] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[85] Eisenhardt L. and Mueller S. *Los Angeles County Municipal Separate Storm Sewer System (MS4) Time Series Analysis, 2002-2015 [report].* [Santa Barbara, CA]: Bren School of Environmental Science and Management, University of California Santa Barbara; 2018.
[86] Heal the Bay. *River Report Card 2018.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/05/River-Report-Card-2018_final.pdf
[87] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 3, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[88] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 6, Table 5. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[89] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 3, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[90] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 3, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[91] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 3, Table 1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[92] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 4, Table 2. This value was calculated by adding up the "Number of New Development / Re-Development Projects" completed in each receiving water area. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[93] Not reported.
[94] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 4, Table 2. This value was calculated by adding up the "Number of Other Projects" completed in each receiving water area. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[95] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 4, Table 2. This value was calculated by adding up the "Area Addressed by Projects (acres)" in each receiving water area. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[96] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, page 4, Table 2. This value was calculated by adding up the "Total BMP Capacity of Projects Completed Since 12/28/2012 (acre-feet)" completed in each receiving water area. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[97] Not specified in the EWMP.
[98] Not specified in the EWMP. The goal is specified in AF (see endnote 99), but not in miles completed.
[99] Enhanced Watershed Management Program for the Malibu Creek Watershed (Feb. 2018), page 94, Figure 33. This number was from the green portion of the graph for "Green Streets" under the 2032 final deadline. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/malibu_creek/MCWEWMP2018-02-22Final(full).pdf
[100] Not specified in the EWMP.
[101] Not specified in the EWMP.
[102] Enhanced Watershed Management Program for the Malibu Creek Watershed (Feb. 2018), page 94, Figure 33. This value was calculated by adding up all of the numbers in each project category under the 2032 final deadline. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/malibu_creek/MCWEWMP2018-02-22Final(full).pdf

[103] Enhanced Watershed Management Program for the Malibu Creek Watershed (Feb. 2018), pages 56 and 57, Table 31. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/malibu_creek/MCWEWMP2018-02-22Final(full).pdf

[104] Enhanced Watershed Management Program for the Malibu Creek Watershed (Feb. 2018), page 94, Figure 33. This value was calculated by adding up all of the numbers in each project category under the 2017 interim deadline. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/malibu_creek/MCWEWMP2018-02-22Final(full).pdf

[105] Enhanced Watershed Management Program for the Malibu Creek Watershed (Feb. 2018), page 94, Figure 33. This value was calculated by adding up all of the numbers in each project category under the 2021 interim deadline. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/malibu_creek/MCWEWMP2018-02-22Final(full).pdf

[106] =(0.35/12)*100%

[107] =(0.35/95.7)*100%

[108] =(0.35/96.3)*100%

[109] Malibu Creek Enhanced Watershed Management Plan Annual Report Watershed Form 2017/18 Reporting Year, pages 8 - 13, Table 6. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html And two additional regional projects were added from the Enhanced Watershed Management Program for Malibu Creek Watershed (Feb. 2018), pages 56 and 57, Table 31. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/malibu_creek/MCWEWMP2018-02-22Final(full).pdf

MARINA DEL REY WATERSHED MANAGEMENT GROUP

Marina del Rey Watershed Management Area

The Marina del Rey Watershed Management Area is located along the Pacific Coast south of Venice and north of Ballona Creek in Central Santa Monica Bay. The Marina del Rey Watershed Management Group includes the cities of Los Angeles and Culver City, Unincorporated County of Los Angeles, and the Los Angeles County Flood Control District (Figure A-9).

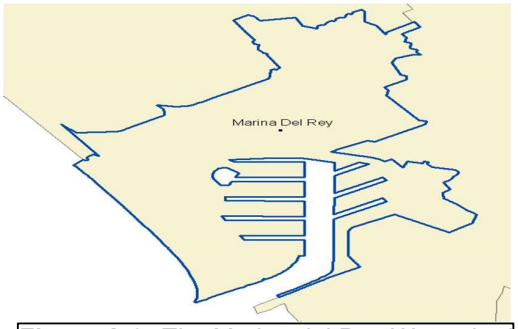

Figure A-9: *The Marina del Rey Watershed Management Area*

Water Quality in the Marina Del Rey Watershed Management Area

Waterbodies in the Marina del Rey Watershed Management Area are listed by the State Board as impaired by copper, PCB, DDT, lead, zinc, fecal coliform, and trash/debris, among other contaminants.[110] At least nine Regional TMDLs apply to the Marina del Rey Watershed Management Area (Table A-17).

TMDL	TMDL Deadline										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
MdR Harbor Toxics (Water)											100%
MdR Harbor Toxics (Sediment, back)					100%						
MdR Harbor Toxics (Sediment, front)								100%			
MdR Mother's Beach Back Basin Bacteria								100%			
SMB DDTs and PCBs (Water Column)	100%										
SMB DDTs and PCBs (Fish Tissue)										100% DDT	100% PCBs
SMB DDTs and PCBs (Bay Sediment)										100% DDT	100% PCBs
BC Trash	97%	100%									
SMB Trash			20%	40%	60%	80%	100%				

Table A-17: *TMDL deadlines for the Marina del Rey (MdR) Harbor, the Ballona Creek (BC), and the Santa Monica Bay (SMB) that are applicable in the Marina del Rey Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Marina del Rey Watershed Management Area will pass in 2024, but projects must be completed by 2021 to comply with the MdR Mother's Beach and Back Basin Bacteria TMDL.

In 2018-2019, many beaches in Marina del Rey received F grades in wet weather, and two beaches received F grades in dry weather, as well.[111] Mother's Beach, between the lifeguard tower and boat launch, is a chronic Beach Bummer.[iii,111] Copper levels remain high in Marina del Rey due, in part, to anti-fouling paint on boats in the harbor.[112]

[iii] Beach Bummers are the top 10 most polluted beaches in terms of FIB levels reviewed under Heal the Bay's Beach Report Card.[111]

Progress towards Marina del Rey EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed in Reporting Year	14[113]	NA[114]	0[115]	0.63[116]	0.03[117]
Completed Since 12/28/12	63[118]	NA[119]	3[120]	23.04[121]	1.41[122]
Proposed	NA[123]	NA[124] (351.3 AF)[125]	NA[126]	1,054.9[127]	673.1[128]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-18: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurements of progress that were provided in comparable units to an established goal were the "Area Addressed (acres)" and the "Total Retention Capacity (AF)." See the endnotes on page A-31 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that three "other projects" were completed since 12/28/12,[120] but regional projects were not reported separately in the Annual Report. No list of projects was provided in the Annual Report, so an internet search was not completed for any of the three "other projects" completed in the Marina del Rey Watershed Management Area. Based on our review, no regional projects were completed since 12/28/12, and therefore, no regional projects were completed in the reporting year; a total of six public regional projects were proposed in the EWMP (Figure A-10A).[129] The EWMP specified that the list of six proposed regional projects did not include the Oxford Basin project, which was completed since 12/28/12.[130]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2021 Final Retention Capacity Goal (AF)	% Complete Towards 2021 Final Goal
1.41[122]	673.1[128]	0.21%[131]

Table A-19: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-19 to the 2021 final goal, derived from information in the EWMP. The percentage complete towards the 2021 final goal is expressed visually in Figure A-10B. See the endnotes on page A-31 for more detail about where each of these values was derived.

Overall Progress towards Marina del Rey EWMP Goals

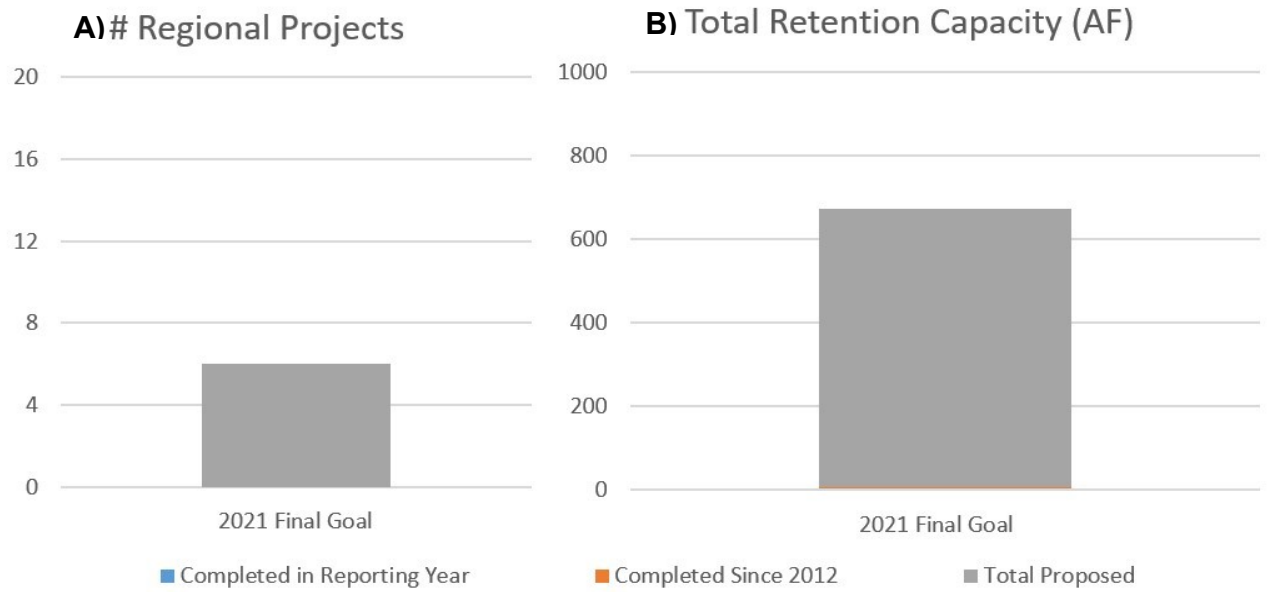

Figure A-10A: *Progress towards the final goal for number of regional projects completed*. No regional projects were completed in the 2017-2018 reporting year. No regional projects were completed since 12/28/12. A total of six regional projects were proposed in the EWMP, leaving all six to be completed by 2021 (in grey).
Figure A-10B: *Overall progress towards the final goal for total retention capacity (AF)*. The Marina del Rey Watershed Management Group achieved a retention capacity of 0.03 AF in the 2017-2018 reporting year (in blue, though this small number is not visible in Figure A-10B), for a total retention capacity of 1.41 AF since 12/28/12 (in orange). This leaves a retention capacity of 671.69 AF to be achieved by 2021 (in grey).

We attempted to assess progress based on the number of regional projects completed (Figure A-10A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” Second, these projects were not listed in any narrative section of the submitted documents, and with no additional information, outside research was not possible. Based on our review, we determined that zero of six originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

Therefore, our assessment of progress under the Marina del Rey EWMP was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Marina del Rey Watershed Management Group achieved a retention capacity of 1.41 AF since 12/28/12, which is 0.21% complete towards the 2021 final retention capacity goal of 673.1 AF (Table A-19, Figure A-10A). This leaves a retention capacity of 671.69 AF to be achieved by 2021. If the current rate of implementation continues, the final 2021 EWMP goal will not be achieved until the year 4877 (Table 1), and the Marina del Rey Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Marina del Rey EWMP[132]

Project Name	Lead	Status	(Estimated) Completion Date
Marina del Rey Triangle Area BMP	City of Los Angeles	Finalized concept report	(Not Reported)
Venice Boulevard Neighborhood Green Streets Regional Project	City of Los Angeles	Initiated prioritization of green streets and concept reports; finalized green street concept reports for North Penmar and South Penmar	(Not Reported)
Contaminated Sediment Management Plan	County of Los Angeles	(Not Reported)	December 2019
Culver City Stormwater Capital Improvement Master Plan	City of Culver City	(Not Reported)	December 2020
Washington Boulevard Stormwater Diversion and Retention Project	City of Culver City	Design phase	October 2020
County Green Streets Master Plan/Green Alley Master Plan	County of Los Angeles	(Not Reported)	Early 2020
MdRH and Mole Road Water Quality Catch Basin Project	County of Los Angeles	(Not Reported)	Spring 2021
Venice of America Centennial Park	(Not Reported)	(Not Reported)	(Not Reported)
Canal Park	(Not Reported)	(Not Reported)	(Not Reported)
Via Dolce Park	(Not Reported)	(Not Reported)	(Not Reported)

Table A-20: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of concept or design as of December 2018 were not yet addressing stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, no information was provided for the Venice of America Centennial Park, Canal Park, or Via Dolce Park. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to achieve the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Marina del Rey Watershed Management Group will do to improve this implementation rate.

[110] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

[111] Heal the Bay. *Heal the Bay 2018-2019 Beach Report Card.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/06/BRC_2019_FINAL2.pdf

[112] California State Water Resources Control Board, Los Angeles Region. *Amendment to the Water Quality Control Plan for the Los Angeles Region to Revise the Total Maximum Daily Load of Toxic Pollutants in Marina del Rey Harbor (Resolution No. R14-004).* 2014. Available at: https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/95_New/ResolutionR14-004_MdRHToxicsRevision_signed.pdf

[113] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 6, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[114] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 8, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[115] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 6, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[116] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 6, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[117] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 6, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[118] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 7, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[119] Not reported.

[120] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 7, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[121] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 7, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[122] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, page 7, Table 2b. It is assumed that this number represents AF of runoff addressed, including runoff captured, treated, and infiltrated. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[123] Not specified in the EWMP.

[124] Not specified in the EWMP. The goal is specified in AF (see Footnote 125), but not in number of miles completed.

[125] Marina del Rey Enhanced Watershed Management Program (Feb. 2018), page ES-7, Table ES-3. This number was from "Project Type: Green Streets." Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/marina_delrey/20180226MdREWMPrevised.pdf

[126] Not specified in the EWMP.

[127] Marina del Rey Enhanced Watershed Management Program (Feb. 2018), page 84, Table 6-10. This is the "TMDL Runoff Area Total" for "Runoff Area (acres)." Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/marina_delrey/20180226MdREWMPrevised.pdf

[128] Marina del Rey Enhanced Watershed Management Program (Feb. 2018), pages ES-7, Table ES-3. This is the total BMP Retention Capacity in the TMDL Runoff Area and in Subwatershed 2 (non-TMDL). Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/marina_delrey/20180226MdREWMPrevised.pdf

[129] Marina del Rey Enhanced Watershed Management Program (Feb. 2018), pages 44 and 45, Table 5-3. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/marina_delrey/20180226MdREWMPrevised.pdf

[130] The EWMP notes: "In addition to the BMPs selected based on the RAA analysis, ongoing projects, including the Oxford Basin Multi-Use Enhancement Project, will provide additional water quality benefits, such as serving as a sink for sediment-bound contaminants from the watershed. Oxford Basin is located to the north of Basin E, and receives wet weather runoff from Subwatershed 4. The RAA analysis does not include any benefits from the Oxford Basin project, as the project is still under construction. Therefore, the BMPs as proposed may not all be necessary to achieve TMDL compliance." Marina del Rey Enhanced Watershed Management Program (Feb. 2018), page 82. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/marina_delrey/20180226MdREWMPrevised.pdf

[131] =(1.41/673.1)*100%

[132] Marina Del Rey Enhanced Watershed Management Group Annual Report Watershed Form, Reporting Year 17-18, pages 8 - 14. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html Additional regional projects were added from the Marina Del Rey Enhanced Watershed Management Program (Feb. 2018), pages 44 and 45, Table 5-3. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/marina_delrey/20180226MdREWMPrevised.pdf

NORTH SANTA MONICA BAY COASTAL WATERSHEDS MANAGEMENT GROUP

North Santa Monica Bay Coastal Watersheds Management Area

Figure A-11: *The North Santa Monica Bay Coastal Watersheds Management Area*

The North Santa Monica Bay Coastal Watersheds Management Area is located along the Pacific Coast within the Santa Monica Bay Watershed. The northern boundary of the Watershed Management Area is the border between Los Angeles County and Ventura County. The North Santa Monica Bay Coastal Watersheds Management Group includes the City of Malibu, Unincorporated County of Los Angeles, and the Los Angeles County Flood Control District (Figure A-11).

Water Quality in the North Santa Monica Bay Coastal Watersheds Management Area

Waterbodies in the North Santa Monica Bay Coastal Watersheds Management Area are listed by the State Board as impaired by FIB, nitrate, nitrite, nitrogen, phosphorus, ammonia, copper, lead, trash/debris, and zinc, among other contaminants.[133] At least four Regional TMDLs apply to the North Santa Monica Bay Coastal Watersheds Management Area (Table A-21).

TMDL	TMDL Deadline											
	2009	…	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
SMB Bacteria (dry)			100%									
SMB Bacteria (wet)	10%			25%					50%			100%
SMB Trash							20%	40%	60%	80%	100%	
MCW Trash				20%	40%	60%	80%	100%				

Table A-21: *TMDL deadlines for the Santa Monica Bay (SMB) and Malibu Creek Watershed (MCW) that are applicable in the North Santa Monica Bay Coastal Watersheds Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the North Santa Monica Bay Coastal Watersheds Management Area will occur in 2021.

Bacterial water quality at the confluence between Topanga Creek and the coast has been improving since 2010; however, in wet weather the overall Beach Report Card grade for the year never gets higher than a C, mostly receiving Fs, while even the annual winter dry weather grade is usually about a C.[134] The site near the outflow of water from the Malibu Lagoon Breach has not had an average above an F since 2010, and the winter dry grade averages are almost all Fs, as well.[134] Additionally, the amount of dissolved copper in the Malibu Creek has steadily risen between 2004 and 2017, as have dissolved lead, zinc, and aluminum.[135]

Progress towards North Santa Monica Bay Coastal Watersheds EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed in Reporting Year	4[136]	NA[137]	0[138]	8.66[139]	0.39[140]
Completed Since 12/28/12	20[141]	NA[142]	4[143]	68.42[144]	0.55[145]
Proposed	NA[146]	NA[147]	NA[148]	299.1[149]	NA[150]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-22: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Area Addressed (acres)." See the endnotes on page A-37 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that four "other projects" were completed since 12/28/12,[143] but regional projects were not reported separately in the Annual Report. There was no discussion in the narrative section of the Annual Report of any projects completed aside from the New/Redevelopment Projects, so we determined that none of the four "other projects" completed were regional projects.[151] Based on our review, no regional projects were completed since 12/28/12, and therefore no regional projects were completed in the reporting year; one regional project was proposed in the EWMP (Figure A-12A).[152]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	Area Addressed Since 12/28/12 (acres)	2021 Final Goal for Area Addressed (acres)	% Complete Towards 2021 Final Goal
0.55[iv,145]	68.42[144]	299.1[149]	22.88%[153]

Table A-23: *Assessment by area addressed (acres).* The total area addressed since 12/28/12, reported in the Annual Report, is compared in Table A-23 to the 2021 final goal, derived from information in the EWMP. The percentage complete towards the 2021 final goal is expressed visually in Figure A-12B. See the endnotes on page A-37 for more detail about where each of these values was derived.

[iv] It is unclear how so many acres of land were addressed (68.42 acres) with so little retention capacity (0.55 AF).

Overall Progress towards North Santa Monica Bay EWMP Goals

Figure A-12A: *Progress towards the final goal for number of regional projects completed.* No regional projects were completed in the 2017-2018 reporting year. No regional projects were completed since 12/28/12. A total of one was proposed in the EWMP, leaving one to be completed by 2021 (in grey).
Figure A-12B: *Overall progress towards the final goal for total area addressed (acres).* The North Santa Monica Bay Watershed Management Group achieved 8.66 acres of area addressed in the 2017-2018 reporting year (in blue), for a total of 68.42 acres of area addressed since 12/28/12 (in orange). This leaves 230.68 acres to be addressed by 2021 (in grey).

We attempted to assess progress based on the number of regional projects completed (Figure A-12A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into "other projects." Second, these projects were not listed in any narrative section of the submitted documents, and with no additional information, outside research was not possible. Based on our review, we determined that zero of one originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

Additionally, in order to reduce stormwater pollution, "area addressed" must mean that the runoff from that area is addressed. Therefore, there should always be an AF equivalent to a reported amount of area addressed (acres). While retention capacity (AF) for the reporting year and since 12/28/12 was reported in the Annual Report, no goal for retention capacity (AF) was provided in the EWMP. Therefore, assessment based on retention capacity (AF) was not possible for the North Santa Monica Bay Coastal Watersheds Management Group.

The North Santa Monica Bay Watersheds Management Group chose to identify its goal, and report its progress, in terms of the area addressed (acres). Therefore, our assessment of progress under the North Santa Monica Bay EWMP was based on area addressed (acres) and not the number of regional projects completed or the retention capacity (AF). As of December 2018, the North Santa Monica Bay Watersheds Management Group achieved 68.42 acres of area addressed since 12/28/12, which is 22.88% complete towards the 2021 final goal of 299.1 acres (Table A-23, Figure A-12B). This leaves 230.68 acres to be addressed by 2021. If the current rate of implementation continues, the final 2021 EWMP goal will not be achieved until the year 2039 (Table 1), and the North Santa Monica Bay Coastal Watersheds Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution. Additionally, without clear definitions of "area addressed (acres)" and "retention capacity (AF)," it is unclear how so many acres of land were addressed (68.42 acres) with so little retention capacity (0.55 AF).

Status of Multi-Year Projects for the North Santa Monica Bay EWMP[154]

Project Name	Funding Status	(Estimated) Completion Date
Trash Capture Systems	Funded (FY 18-19 capital improvement program budget)	Jun-20
Downspout Retrofit Program	Funded (Part of regular staff budget)	Jun-21
Latigo Canyon Green Street	Funded (FY 21-22 CIP budget)	Jun-21
Corral Canyon Green Street	Pending	Jun-21
Marie Canyon Green Street	Funded (FY 19-20 CIP budget)	Jun-20
Winter Canyon Green Street	Funded(FY 18-19 CIP budget)	Jun-21
Sweetwater Canyon Green Street	Funded(FY 21-22 CIP budget)	Jun-21
Las Flores Canyon (W1-14)	Pending	Jun-21
Las Flores Canyon (S1-14)	Pending	Jun-21
Las Flores Canyon (S1-14)	Pending	Jan-20
Viewridge Super Green Streets	Funded	Jan-20

Table A-24: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of funded or pending as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. There were 11 projects listed with an estimated completion date of 2020 or 2021, though not all have confirmed funding, and no project status was determined based on our review of the documents for this report. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the North Santa Monica Bay Watersheds Management Group will do to improve this implementation rate.

[133] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[134] *Beach Report Card with NowCast.* Heal the Bay. 2018 Beach Report Card. Available at: https://www.beachreportcard.org
[135] Eisenhardt L. and Mueller S. *Los Angeles County Municipal Separate Storm Sewer System (MS4) Time Series Analysis, 2002-2015 [report].* [Santa Barbara, CA]: Bren School of Environmental Science and Management, University of California Santa Barbara; 2018.
[136] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[137] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 7, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[138] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[139] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[140] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 4, Table 2a. It is assumed that this number represents AF of runoff addressed, including runoff captured, treated, and infiltrated. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[141] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[142] Not Reported.
[143] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[144] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[145] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[146] Not specified in the EWMP.
[147] Not specified in the EWMP.
[148] Not specified in the EWMP.
[149] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 10, Table 3-1. This number is the Total "Treated Area Target." Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[150] Not specified in the EWMP. The North Santa Monica Bay Watershed Management Group chose to focus on total area treated. "Pursuant to the *Effective Impervious Area (EIA) Annual Reporting Requirement* memo issued by the Los Angeles Regional Water Quality Control Board in May 2017, summarizing the area addressed by projects that retain runoff is a reasonable substitute for reporting percent EIA change." North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, page 4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[151] North Santa Monica Bay Coastal Watershed Management Group 2017-2018 Annual Report, Adaptive Management Technical Memorandum, page 21, section 4.1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[152] Enhanced Watershed Management Program for the North Santa Monica Bay Coastal Watersheds (Mar. 2016), page 164, Table 37. 11 projects are listed. 1 is designated as regional. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_monica/north_santamonicabay/NSMBCW%20EWMP_March%202016rev.pdf

[153] =(68.42/299.1)*100%

[154] North Santa Monica Bay Coastal Watersheds Annual Report Watershed Form Reporting Year 17-18, pages 8 and 9, Table 2-1. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html Additional information found in the Enhanced Watershed Management Program for North Santa Monica Bay Coastal Watersheds (Mar. 2016), page 164, Table 37. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_monica/north_santamonicabay/NSMBCW%20EWMP_March%202016rev.pdf

PALOS VERDES PENINSULA WATERSHED MANAGEMENT GROUP

Palos Verdes Peninsula Watershed Management Area

The Palos Verdes Peninsula Watershed Management Area is located along the Pacific Coast at the Palos Verdes Peninsula. The Palos Verdes Peninsula Watershed Management Group includes the cities of Palos Verdes Estates, Rancho Palos Verdes, and Rolling Hills Estates; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-13). Machado Lake is being addressed separately.

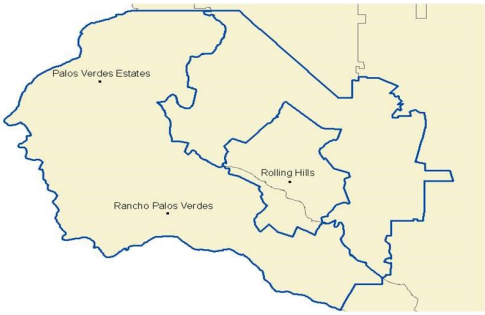

Figure A-13: *The Palos Verdes Peninsula Watershed Management Area*

Water Quality in the Palos Verdes Peninsula Watershed Management Area

Waterbodies in the Palos Verdes Peninsula Watershed Management Area are listed by the State Board as impaired by copper, lead, fecal coliform, sediment toxicity, pesticides, trash/marine debris, DDT, PCB, eutrophication, ammonia, nitrogen, and phosphorus, among other contaminants.[155] Eight Regional TMDLs apply to the Palos Verdes Peninsula Watershed Management Area (Table A-25).

TMDL	TMDL Deadline										
	2012	2013	2014	2015	2016	2017	2018	2019	2020	...	2032
SMB Bacteria (Winter Dry)	100%										
SMB Bacteria (Summer Dry)	100%										
SMB Bacteria (Wet)		100%									
SMB Trash					20%	40%	60%	80%	100%		
Machado Lake Trash	20%	40%	60%	80%	100%						
Machado Lake Pesticides / PCBs								100%			
Machado Lake Nutrient			*				100%				
Harbor Toxics											100%

** Interim - Nitrogen 2.45 mg/L; Phosphorus 1.25 mg/L (Interim 1(2009) - Nitrogen 3.5 mg/L; Phosphorus 1.25 mg/L; Final (2018) - Nitrogen 1.0 mg/L; Phosphorus 0.1mg/L)*[156]

Table A-25: *TMDL deadlines for the Santa Monica Bay (SMB), Machado Lake, and Los Angeles and Long Beach Harbors that are applicable in the Palos Verdes Peninsula Watershed Management Area*. The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Palos Verdes Peninsula Watershed Management Area will pass in 2032.

There are few beach water quality sampling sites for the Palos Verdes Peninsula Watershed Management Area, but the existing sampling sites do all show B grades in both wet and dry weather.[157] Although this is relatively safe for human recreation, there is still room for improvement, particularly during dry weather, for which the final TMDL deadline has passed. Dry weather bacteria violations have continued to occur in the Palos Verdes Peninsula Watershed Management Area between 2013 and October 2017.[158]

Progress towards Palos Verdes Peninsula Watershed EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed in Reporting Year	2[159]	NA[160]	1[161]	755.77[162]	4.64[163]
Completed Since 12/28/12	19[164]	NA[165]	3[166]	832.77[167]	7.19 [168]
Proposed	NA[169]	NA[170]	NA [171]	NA[172]	750[173]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-26: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Total Retention Capacity (AF)." See the endnotes on page A-43 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that three "other projects" were completed since 12/28/12.[166] Review of the Annual Report revealed that all three of these projects were regional projects, and that one was completed in the reporting year.[174] Therefore, three regional projects were completed since 12/28/12, one of which was completed in the reporting year, out of a total of seven projects proposed in the EWMP (Figure A-14A).[175]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2032 Final Retention Capacity Goal (AF)	% Complete Towards 2032 Final Goal
7.19[168]	750[173]	0.96%[176]

Table A-27: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-27 to the 2032 final goal, derived from information in the EWMP. The percentage complete towards the 2032 final goal is expressed visually in Figure A-14B. See the endnotes on page A-43 for more detail about where each of these values was derived.

Overall Progress towards Palos Verdes Peninsula EWMP Goals

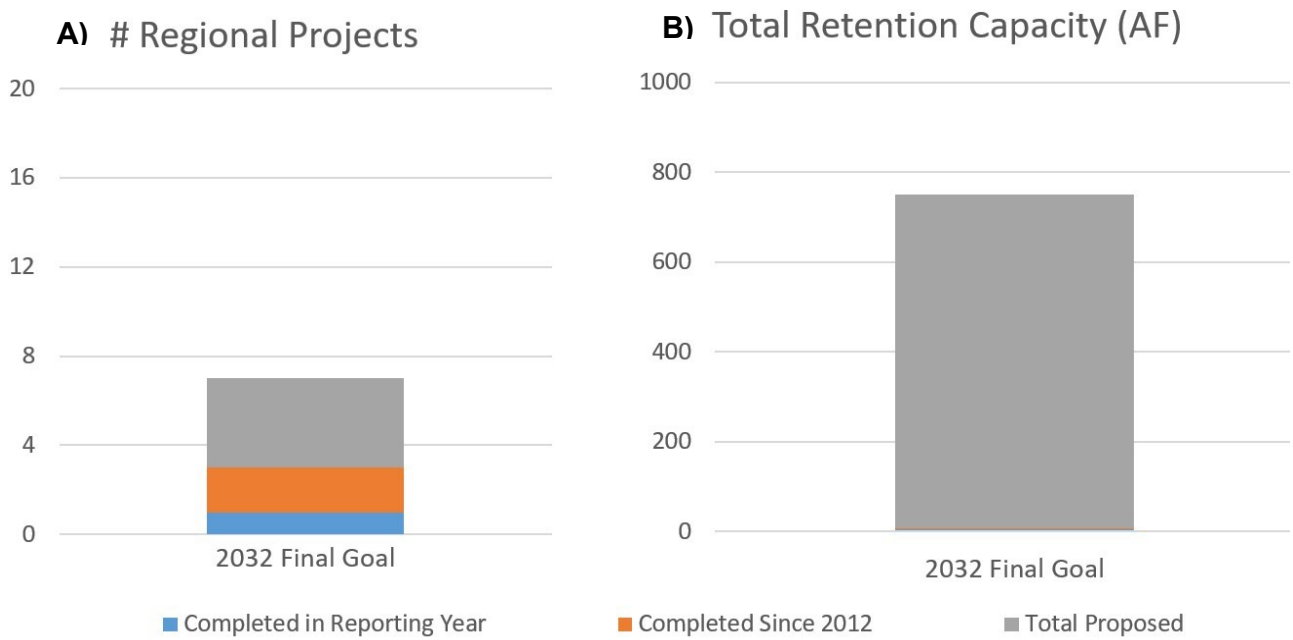

Figure A-14A: *Progress towards the final goal for number of regional projects completed.* One regional project was completed in the 2017-2018 reporting year (in blue). Three total regional projects were completed since 12/28/12 (in orange). A total of seven regional projects were proposed in the EWMP, leaving four to be completed by 2032 (in grey).
Figure A-14B: *Overall progress towards the final goal for total retention capacity (AF)*. The Palos Verdes Peninsula Watershed Management Group achieved a retention capacity of 4.64 AF in the 2017-2018 reporting year (in blue), for a total retention capacity of 7.19 AF since 12/28/12 (in orange). This leaves a retention capacity of 742.81 AF to be achieved by 2032 (in grey).

We completed an assessment of progress based on the number of regional projects completed (Figure A-14A). Though regional projects were not reported separately, but rather lumped into “other projects, these projects were listed in a narrative section of the Annual Report, with additional information. Based on our review, we determined that three of seven originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, because many types of projects are necessary in addition to regional projects, this does not provide a comprehensive overview of progress made under the Palos Verdes Peninsula EWMP.

Therefore, our assessment of progress under the Palos Verdes Peninsula Watershed Management Group was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Palos Verdes Peninsula Watershed Management Group achieved a retention capacity of 7.19 AF since 12/28/12, which is 0.96% complete towards the 2032 final retention capacity goal of 750 AF (Table A-27, Figure A-14A). This leaves a retention capacity of 742.81 AF to be achieved by 2032. If the current rate of implementation continues, the final 2032 EWMP goal will not be achieved until the year 2638 (Table 1), and the Palos Verdes Peninsula Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Palos Verdes Peninsula EWMP[177]

Project Name	Status	(Estimated) Completion Date
Casaba Estates	Completed	February 2013
San Ramon Canyon	Completed	November 2014
Chandler Quarry	Completed	Online 2018
South Coast Botanic Garden	County is prioritizing planning of a regional project with the PVP agencies but will continue to seek funding and/or partnership opportunities for this project	(Not Reported)
Palos Verdes Landfill	Original scope of proposed project found to be infeasible, however a smaller, alternative scope on this site in combination with other projects may be considered pending results of the Torrance Airport Stormwater Infiltration Project Preliminary Design.	Found to be infeasible
Valmonte Regional BMP	Original scope of project found to be infeasible, however a smaller scope project in combination with other projects may be proposed pending results of the Torrance Airport Stormwater Infiltration Project Preliminary Design.	Found to be infeasible
Eastview Park	Planning Phase. Site Investigation and Preliminary Engineering to be completed by 2027.	(Not Reported)

Table A-28: *A summary of the status of multi-year projects as of December 2018.*

The clear reporting of three completed projects, included in the Permittee's Annual Report, was very helpful in assessing which projects were completed since 12/28/12. Projects listed in Table A-28 with a status of planning or proposed as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, the Palos Verdes Landfill project and the Valmonte Regional BMP were both found to be infeasible, but it was not clear if any new projects had been considered to replace these cancelled projects. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Palos Verdes Peninsula Watershed Management Group will do to improve this implementation rate.

[155] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

[156] Enhanced Watershed Management Program for the Palos Verdes Peninsula Watershed (Apr. 2019), page 2-22, Table 2-13. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/palos_verdes/PVP_EWMP_Revised_2019_04_05.pdf

[157] *Beach Report Card with NowCast.* Heal the Bay. 2018 Beach Report Card. Available at: https://www.beachreportcard.org

[158] Bell, Corinne. *Omission Accomplished II: The Lack of Municipal Stormwater Enforcement In the Los Angeles Region.* Natural Resources Defense Council. 2019. Available at: https://www.nrdc.org/sites/default/files/omission-accomplished-municipal-stormwater-enforcement-la-report.pdf

[159] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[160] Green streets were not included in the Annual Report and were reported to be "of limited value" in the Palos Verdes Peninsula EWMP Watershed Management Area because "documented geologic and geotechnical constraints in many areas of the Palos Verdes Peninsula do not allow for cost-effective infiltration-based stormwater control measures and based on the analysis performed in the EWMP, biofiltration systems cannot reliably attain the nutrient objectives." Palos Verdes Peninsula EWMP Adaptive Management Report (Dec. 2018), page 26. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[161] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 4, Table 2a. Table 2e on page 6 in the Annual Report makes this project look like three projects, but elsewhere in the report, it is described as a single project. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[162] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[163] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[164] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[165] Not reported.

[166] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 5, Table 2b. Table 2e on page 6 in the Annual Report makes one project look like three projects, but elsewhere in the report, it is described as a single project. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[167] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[168] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[169] Not specified in the EWMP. However, it is of note that the number of new/redevelopment projects has been lower than expected because the rate of redevelopment has been lower than projected and most redevelopment projects that are proposed do not meet the thresholds that would trigger Low Impact Development requirements. Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 20, footnote 17 to Table 3a; Palos Verdes Peninsula Watershed Management Plan Adaptive Management Report (Dec. 2018), page 12. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[170] Not specified in the EWMP.

[171] Not specified in the EWMP.
[172] Not specified in the EWMP.
[173] Enhanced Watershed Management Program for the Palos Verdes Peninsula Watershed (Apr. 2019), page 3-1. The estimate does not include an estimate of recharged groundwater, only the reduced amount of stormwater runoff leaving the Peninsula EWMP Area as a result of BMP implementation. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/palos_verdes/PVP_EWMP_Revised_2019_04_05.pdf
[174] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, page 6, Table 2e. Table 2e in the Annual Report makes this project look like three projects, but elsewhere it is described as a single project to redevelop the quarry and it is listed as one of the seven regional projects initially proposed. Palos Verdes Peninsula Watershed Management Plan Adaptive Management Report (Dec. 2018), page 45, Table 15. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[175] Enhanced Watershed Management Program for the Palos Verdes Peninsula Watershed (Apr. 2019), page 3-36, Table 3-5. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html Palos Verdes Peninsula Watershed Management Plan Adaptive Management Report (Dec. 2018), page 45, Table 15. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/palos_verdes/PVP_EWMP_Revised_2019_04_05.pdf
[176] =(7.19/750)*100%
[177] Palos Verdes Peninsula Watershed Management Group Annual Report Volume I Watershed Form Reporting Year 2017-18, pages 14-16, Table 2g. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html Additional information was added from the Enhanced Watershed Management Program for the Palos Verdes Peninsula Watershed (Apr. 2019), page 3-36, Table 3-5. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/palos_verdes/PVP_EWMP_Revised_2019_04_05.pdf

RIO HONDO / SAN GABRIEL RIVER WATERSHED MANAGEMENT GROUP

Rio Hondo / San Gabriel Watershed Management Area

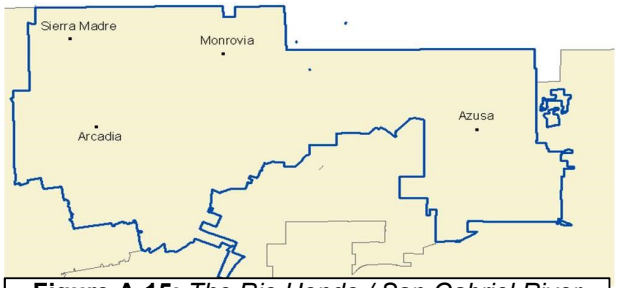

Figure A-15: *The Rio Hondo / San Gabriel River Watershed Management Area*

The Rio Hondo / San Gabriel River Watershed Management Area is located partially within the Los Angeles River Watershed and partially within the San Gabriel River Watershed at the base of the San Gabriel Mountains. The Rio Hondo / San Gabriel River Watershed Management Group includes the Cities of Arcadia, Azusa, Bradbury, Duarte, Monrovia, and Sierra Madre; Unincorporated County of Los Angeles, and the Los Angeles County Flood Control District (Figure A-15).

Water Quality in the Rio Hondo / San Gabriel River Watershed Management Area

Waterbodies in the Rio Hondo / San Gabriel River Watershed Management Area are listed by the State Board as impaired by trash/debris, nitrogen, FIB, DDT, and PCB, among other contaminants.[178] At least 12 Regional TMDLs apply to the Rio Hondo / San Gabriel River Watershed Management Area (Table A-29).

TMDL	TMDL Deadline																		
	'12	..	'16	'17	..	..	'20	..	'23	'24	..	'26	..	'28	..	'30	..	'36	'37
LAR Nutrients	100%																		
LAR Trash	70%		100%																
LAR Metals	25%									50%				100%					
SGR Metals				10%			35%		65%			100%							
LAR Bacteria (Dry w/o LRS)									100%										
LAR Bacteria (Dry w/ LRS)																100%			
LAR Bacteria (Wet)																			100%
SGR Bacteria (Dry)												100%							
SGR Bacteria (Wet)																		100%	
LA Area Lakes Trash	20%		100%																
LA Area Lakes PCB / DDT										100%									
LA Area Lakes Nutrients												100%							

Table A-29: *TMDL deadlines for the LA River (LAR), the San Gabriel River (SGR) and LA Area Lakes that are applicable in the Rio Hondo / San Gabriel River Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Rio Hondo / San Gabriel River Watershed Management Area will pass in 2037.

Heal the Bay's 2018 River Report Card showed some exceedances of FIB limits in the North and West Fork of the San Gabriel River, though water quality in the San Gabriel Mountains, near the Rio Hondo / San Gabriel River Watershed Management Area, was generally good.[179] However, there is evidence that FIB concentrations increase in wet weather, and that concentrations of heavy metals increased in both wet and dry weather from 2002-2017 in the San Gabriel River Watershed.[180]

Progress towards the Rio Hondo / San Gabriel River EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed In Reporting Year	9[181]	0[182]	0[183]	12.64[184]	0.77[185]
Completed Since 12/28/12	64[186]	NA[187]	0[188]	34.49[189]	2.02[190]
Proposed	NA[191]	273[192]	NA[193]	NA[194]	NA[195]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-30: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. There were no measurements of progress provided in comparable units to an established goal for the Rio Hondo / San Gabriel EWMP. See the endnotes on page A-49 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that zero "other projects" were completed in the reporting year or since 12/28/12. No reference to any regional projects was found in the Annual Report. Therefore, no regional projects were completed since 12/28/12, no regional projects were completed in the reporting year, and a total of four regional projects were proposed in the EWMP (Figure A-16).[196]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2037 Final Retention Capacity Goal (AF)	% Complete Towards 2037 Final Goal
2.02[190]	NA[195]	NA[197]

Table A-31: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is listed in Table A-31. However the 2037 final AF goal is not provided in the EWMP. Therefore, compliance assessment is not possible for the Rio Hondo / San Gabriel River Watershed Management Group. See the endnotes on page A-49 for more detail about where each of these values was derived.

Overall Progress towards Rio Hondo / San Gabriel River EWMP Goals

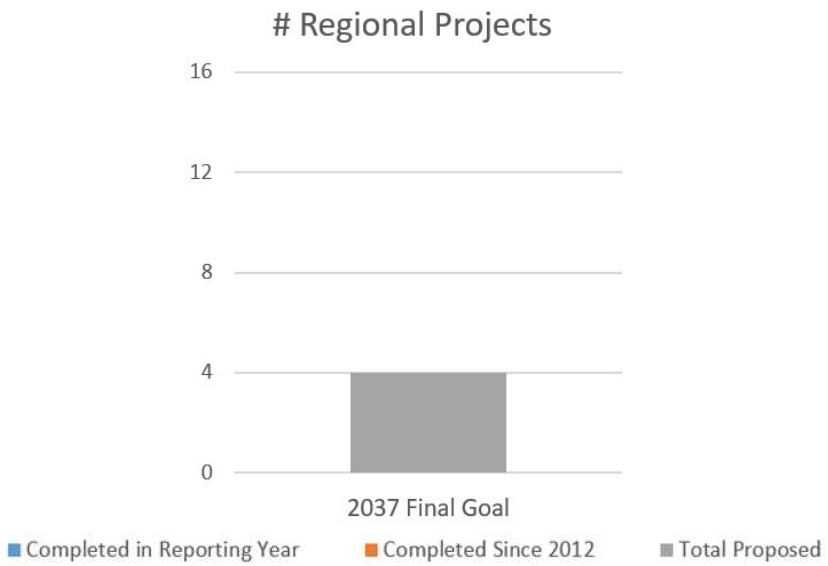

Figure A-16: *Progress towards the final goal for number of regional projects completed*. No regional projects were completed in the 2017-2018 reporting year. No regional projects were completed since 12/28/12. A total of four regional projects were proposed in the EWMP, leaving all four to be completed by 2037 (in grey).

We completed an assessment of progress made based on the number of regional projects completed because no "other projects," which included regional projects, were reported as completed. Based on our review, we determined that zero of four originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, it was not clear that the four originally proposed projects would be enough to reach water quality goals. More regional projects, in addition to the four proposed in the EWMP, might still be necessary to reach final AF goals. Therefore, the goal for the number of regional projects remains uncertain.

We attempted to complete an assessment of progress based on retention capacity (AF), but this was not possible due to a lack of adequate information in the documents reviewed for this report. As of December 2018, the Rio Hondo / San Gabriel River Watershed Management Group achieved a retention capacity of 2.02 AF since 12/28/12 (Table A-31). However, we were not able to determine an interim goal or final goal for the 2037 final deadline, and thus were unable to assess progress. Therefore, overall progress towards interim and final goals for total retention capacity achieved was not possible for the Rio Hondo / San Gabriel River Watershed Management Group.

Status of Multi-Year Projects for the Rio Hondo / San Gabriel River EWMP[198]

Project Name	Lead	Status
Recreation Park	(Not Reported)	(Not Reported)
Arboretum of LAC	(Not Reported)	(Not Reported)
Sierra Vista PARK	(Not Reported)	(Not Reported)
Royal Oaks Trail (LAR)	Monrovia and County of Los Angeles	(Not Reported)
L. Garcia Park	(Not Reported)	(Not Reported)
Eisenhower Park	Monrovia and Sierra Madre	(Not Reported)
LADWP Easement	(Not Reported)	(Not Reported)
Encanto Park	Azusa	(Not Reported)
Royal Oaks Trail (SGR)	County of Los Angeles	(Not Reported)
Memorial Park (Azusa)	(Not Reported)	(Not Reported)

Table A-32: *A summary of the status of multi-year projects as of December 2018.*

Projects listed as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, we were unable to determine a project status or estimated completion date for any of the 10 projects proposed in the Rio Hondo / San Gabriel River Watershed Management Area. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current reporting format does not provide enough information to determine what the Rio Hondo / San Gabriel River Watershed Management Group will do to ensure an implementation rate sufficient to achieve the final AF goal before the deadline passes.

[178] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[179] Heal the Bay. *River Report Card 2018.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/05/River-Report-Card-2018_final.pdf
[180] Eisenhardt L. and Mueller S. *Los Angeles County Municipal Separate Storm Sewer System (MS4) Time Series Analysis, 2002-2015 [report].* [Santa Barbara, CA]: Bren School of Environmental Science and Management, University of California Santa Barbara; 2018.
[181] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, page 3, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[182] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, page 6, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[183] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, page 3, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[184] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, page 3, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[185] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, page 3, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[186] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, p. 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[187] Not Reported.
[188] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, p. 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[189] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, page 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[190] Rio Hondo San Gabriel River Water Quality Group Annual Report 2017/18 Reporting Year, p. 4, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[191] Not specified in the EWMP.
[192] This number was calculated by taking the total miles proposed in the last approved EWMP (436) and subtracting 163 miles in the San Gabriel River watershed. This was done because the most recent proposed EWMP states that zero miles of green streets will be built in this watershed. *Compare* Rio Hondo/San Gabriel River Revised Enhanced Watershed Management Program (Dec. 2018), page 25. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/rio_hondo/RHSGR_proposed-rEWMP_2018-12-17.pdf
with Rio Hondo/San Gabriel River Revised Enhanced Watershed Management Program (Apr. 2016), page xvi, listing 436 miles. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/rio_hondo/16-04-01%20RH%20SGRWQG%20EWMP%20Rev2a.pdf
[193] Not specified in the EWMP
[194] Not specified in the EWMP
[195] Not specified in the EWMP.
[196] Rio Hondo/San Gabriel River Revised Enhanced Watershed Management Program (Dec. 2018), page 13. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/rio_hondo/RHSGR_proposed-rEWMP_2018-12-17.pdf

[197] Not Measureable.
[198] Rio Hondo/San Gabriel River Revised Enhanced Watershed Management Program (Dec. 2018), pages 12 - 22. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/rio_hondo/RHSGR_proposed-rEWMP_2018-12-17.pdf

SANTA MONICA BAY JURISDICTIONS 2 & 3 WATERSHED MANAGEMENT GROUP

Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area

The Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area is located along the Pacific Coast in the Santa Monica Bay Watershed, and spans most of Central Santa Monica Bay, except for the Marina del Rey and Ballona Creek Watershed Management Areas. The Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Group includes the Cities of El Segundo, Los Angeles, and Santa Monica; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-17).

Figure A-17: *The Santa Monica Bay Jurisdictions 2&3 Watershed Management Area*

Water Quality in the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area

Waterbodies in the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area are listed by the State Board as impaired by FIB, PCB, DDT, trash/plastic pellets, and lead, among other contaminants.[199] At least three Regional TMDLs apply to the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area (Table A-33).

TMDL	TMDL Deadline										
	2009	…	2012	2013	…	2016	2017	2018	2019	2020	2021
SMB Bacteria (dry)			100%								
SMB Bacteria (wet)	10%			25%				50%			100%
SMB Trash						20%	40%	60%	80%	100%	

Table A-33: *TMDL deadlines for the Santa Monica Bay (SMB) that are applicable in the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant listed. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Area will pass in 2021.

Permittees in the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Group are in violation of the 2012 Dry Weather Bacteria TMDL deadline listed above, as there have been dry weather violations reported along this section of the Santa Monica coastline from December 2012 through October 2017.[200] Additionally, the Central Santa Monica Bay receives mostly A and B dry weather grades on Heal the Bay's Beach Report Card, though some sites still receive a C.[201] Most of these sites drop to an F during wet weather.[201] For example, water near the Santa Ynez drain has consistently received an F for wet weather in Heal the Bay's Beach Report Card.[202] Near the drain from La Pulga Canyon, water quality has dropped significantly since 2010 during wet weather, and the area near the drain of Santa Monica Canyon has consistently received F grades every year since 2010 during wet weather.[202]

Progress towards Santa Monica Bay Jurisdictions 2 & 3 EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed in Reporting Year	300[203]	0.17[204] (0.19 AF[205])	4[206]	663.83[207]	1.9[208]
Completed Since 12/28/12	1,145[209]	NA[210] (0.69 AF[211])	28[212]	13,905.55[213]	22.61[214]
Proposed	NA[215]	NA[216] (96.8 AF[217])	NA[218]	NA[219]	348.1[220]

** "Other Projects" is defined as green streets, regional projects, low flow diversions and other retrofits. This category does not include new/redevelopment projects.*

Table A-34: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurements of progress that were provided in comparable units to an established goal were the retention capacity (AF) for green streets specifically, and the "Total Retention Capacity (AF)." See the endnotes on page A-55 for more detail about where each of these values was derived.

Regional Projects

A review of regional projects completed should be possible on the basis of the Annual Report, but the lack of necessary information about completed projects required some limited outside research. The Annual Report stated that 28 "other projects" were completed since 12/28/12.[212] An internet search of completed projects[221] revealed that five of the projects that were completed since 12/28/12 were regional projects, and that two of these projects were completed in the reporting year. Therefore, five regional projects were completed since 12/28/12, two of which were completed in the reporting year, out of a total of eight regional projects proposed in the EWMP (Figure A-18A).[222]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2019 Interim Retention Capacity Goal (AF)	2021 Final Retention Capacity Goal (AF)	% Complete Towards 2019 Interim Goal	% Complete Towards 2021 Final Goal
22.61[214]	20.5[223]	348.1[220]	110.29%[224]	6.50%[225]

Table A-35: *Assessment by retention capacity (AF).* The total retention capacity is a better measurement of overall progress than the retention capacity achieved through green streets alone. Therefore, the total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-35 to the 2019 interim goal and the 2021 final goal, both derived from information in the EWMP. The percentage complete towards the 2019 interim goal and percentage complete towards the 2021 final goal are expressed visually in Figure A-18B. See the endnotes on page A-55 for more detail about where each of these values was derived.

Overall Progress towards Santa Monica Bay Jurisdictions 2 & 3 EWMP Goals

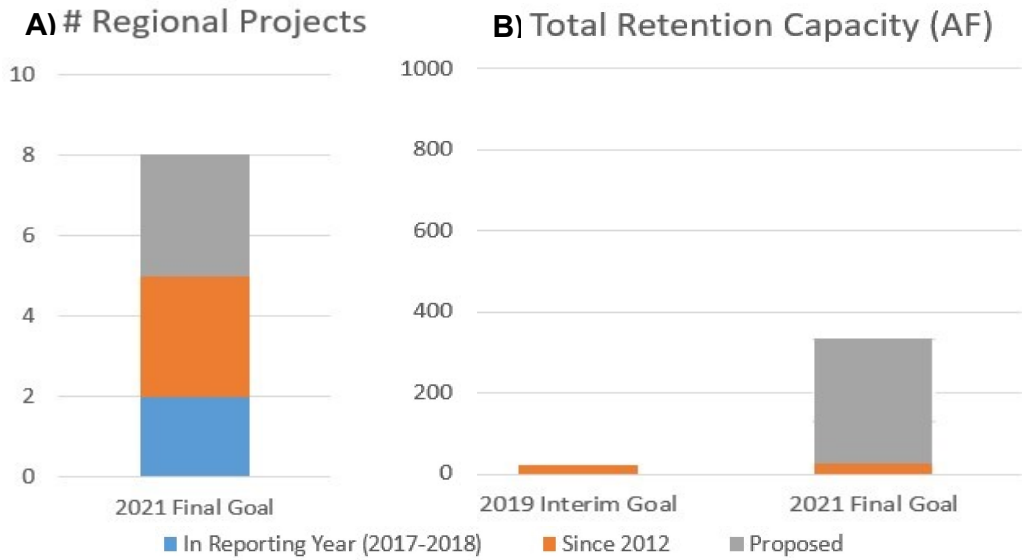

Figure A-18A: *Progress towards the final goal for number of regional projects completed*. Two regional projects were completed in the 2017-2018 reporting year (in blue). An additional three regional projects were completed since 12/28/12 for a total of five (in orange). A total of eight regional projects were proposed in the EWMP, leaving three to be completed by 2021 (in grey).
Figure A-18B: *Overall progress towards interim and final goals for total retention capacity (AF).* The Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Group achieved a retention capacity of 1.9 AF in the 2017-2018 reporting year (in blue, though this small number is not visible in Figure A-18B), for a total retention capacity of 22.61 AF since 12/28/12 (in orange). This leaves a retention capacity of 325.49 AF to be achieved by 2021 (in grey).

We attempted to assess progress based on the number of regional projects completed (Figure A-18A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” Second, these projects were listed in a narrative section of the Adaptive Management Report, but with no additional information, so outside research was possible and necessary. Based on our review, with limited additional research, we determined that five of eight originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

The Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Group included progress completed through green streets in terms of the amount of retention capacity (AF) (0.69 AF), which was comparable to the goal established in the EWMP (96.8 AF). However, this did not provide an accurate assessment of overall progress, as green streets alone will not meet the final goal.

Therefore, our assessment was based on total retention capacity (AF) and not the number of regional projects completed or the retention capacity of green streets alone. As of December 2018, the Santa Monica Bay Jurisdictions 2 &3 Watershed Management Group achieved a retention capacity of 22.61 AF since 12/28/12, which is 6.50% complete towards the 2021 final retention capacity goal of 348.1 AF (Table A-35, Figure A-18B). This group is in compliance with its 2019 deadline. However, there remains a retention capacity of 325.49 AF to be achieved by 2021. If the current rate of implementation continues, the final 2021 EWMP goal will not be achieved until the year 2105 (Table 1), and the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Santa Monica Bay Jurisdictions 2 & 3 EWMP[226]

Project Name	Status	Funding Status	(Estimated) Completion Date
Temescal Canyon - Phase II	Construction	Funded	Aug-18
Riviera Country Club	Planning	Funded	(Not Reported)
Argo Drain-Westchester	Design	Funded	Apr-19
Mandeville Canyon BMP	Concept Design	Seeking Funding	(Not Reported)
Los Lions- Santa Ynez BMP	Concept Design	Seeking Funding	(Not Reported)
Penmar - Phase II	Construction	Funded	Aug-19
CBI Santa Monica Pier	Construction	Funded	Sep-18

Table A-36: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of planning, design, concept design, and construction as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. Unfortunately, information that was important to fully understand implementation progress was not provided consistently by all EWMP groups for multi-year projects. For example, the original expected completion date for the Temescal Canyon – Phase II project was August 2018, but as of December 2018, it was still under construction, and we were not able to find an updated estimated completion date. Additionally, without an estimated retention capacity for each project, it is not clear that the final AF goal will be achieved even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Santa Monica Bay Jurisdictions 2 & 3 Watershed Management Group will do to improve this implementation rate.

[199] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[200] Bell, Corinne. *Omission Accomplished II: The Lack of Municipal Stormwater Enforcement In the Los Angeles Region.* Natural Resources Defense Council. 2019. Available at: https://www.nrdc.org/sites/default/files/omission-accomplished-municipal-stormwater-enforcement-la-report.pdf
[201] Heal the Bay. *Heal the Bay 2018-2019 Beach Report Card.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/06/BRC_2019_FINAL2.pdf
[202] *Beach Report Card with NowCast.* Heal the Bay. 2018 Beach Report Card. Available at: https://www.beachreportcard.org
[203] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 4, Table 3. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[204] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 8, Table 7. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[205] Santa Monica Bay Jurisdictional Group 2 and 3 EWMP Adaptive Management Report (Dec. 2018), page 6, Table 5. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[206] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 4, Table 3. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[207] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 4, Table 3. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[208] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 4, Table 3. This value differs from the value in the Santa Monica Bay Jurisdictions 2 and 3 EWMP Adaptive Management Report December 2018, page 6, Table 5, which is 0.28 AF. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[209] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 5, Table 4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[210] Not Reported.
[211] Santa Monica Bay Jurisdictions 2 and 3 EWMP Adaptive Management Report December 2018, page 6, Table 5. Numbers were added from each reporting year from 2013 through 2018 for "Green Streets Capacity (acre-feet)." Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[212] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 5, Table 4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[213] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 5, Table 4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[214] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 5, Table 4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[215] Not specified in the EWMP.
[216] Not specified in the EWMP. The goal was specified in AF (see Endnote 217), but not in number of miles completed.
[217] Santa Monica Bay Jurisdictional Group 2 and 3 Enhanced Watershed Management Program (Nov. 2018), page 83, table 5-4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[218] Not specified in the EWMP.
[219] Not specified in the EWMP.

[220] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 1, Table 1; and page 1, Table 2. This value was calculated by adding up all of the total numbers for each jurisdiction. It was assumed that the total value for the City of LA is a typo, and should be 64.4 instead of 60.4 to match the 2021 goal. This total included retention capacity (AF) achieved through regional projects and green streets, but not through new/redevelopment projects. A goal for retention capacity through new/redevelopment projects was not specified in the EWMP. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[221] Santa Monica Bay Jurisdictions 2 and 3 EWMP Adaptive Management Report (Dec. 2018), page 5, Table 4. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[222] Santa Monica Bay Jurisdictional Group 2 and 3 Enhanced Watershed Management Program (Nov. 2018), page 51, table 4-8. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_monica/EWMPSMBJ2&3revisedfortimeextension110218.pdf
[223] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, page 1, Table 1; and page 1, Table 2. This value was calculated by adding up all of the numbers for the 2019 interim deadline. This total included retention capacity (AF) achieved through regional projects and green streets, but not through new/redevelopment projects. A goal for retention capacity through new/redevelopment projects was not specified in the EWMP. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[224] =(22.61/20.5)*100%
[225] =(22.61/348.1)*100%
[226] Santa Monica Bay Jurisdictional Group 2 and 3 Watershed Management Group Annual Report 2017/18 Reporting Year, pages 13 - 15, Table 9. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html Additional information found in the Santa Monica Bay Jurisdictional Group 2 and 3 Enhanced Watershed Management Program (Nov. 2018), Appendix A, pages A-31 - A-44. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_monica/EWMPSMBJ2&3revisedfortimeextension110218.pdf

UPPER LOS ANGELES RIVER WATERSHED MANAGEMENT GROUP

Upper Los Angeles River Watershed Management Area

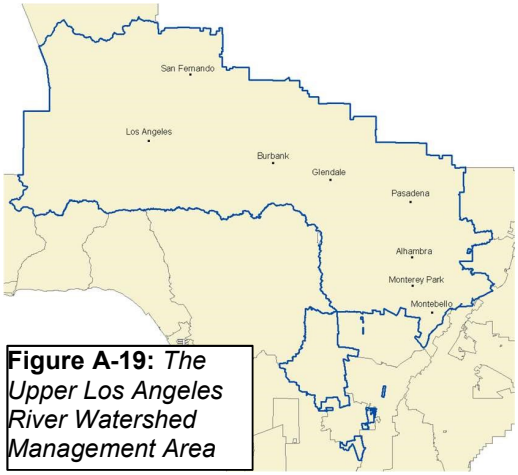

Figure A-19: *The Upper Los Angeles River Watershed Management Area*

The Upper Los Angeles River Watershed Management Area covers the northern section of the Los Angeles River Watershed, spanning as far west as the border between Los Angeles and Ventura Counties, through the San Fernando Valley, and as far east as the western San Gabriel Valley. The Upper Los Angeles River Watershed Management Area includes the cities of Alhambra, Burbank, Calabasas, Glendale, Hidden Hills, La Cañada Flintridge, Los Angeles, Montebello, Monterey Park, Pasadena, Rosemead, San Fernando, San Gabriel, San Marino, South El Monte, South Pasadena, and Temple City; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-19).

Water Quality in the Upper Los Angeles River Watershed Management Area

Waterbodies in the Upper Los Angeles River Watershed Management Area are listed by the State Board as impaired by nutrients, trash, heavy metals, FIB, and toxic pollutants, among other contaminants.[227] At least seven Regional TMDLs apply to the Upper Los Angeles River Watershed Management Area (Table A-37).

TMDL	TMDL Deadlines															
	2012	2013	2014	2015	2016	2017	…	2020	…	2024	…	2028	…	2032	…	2037
LAR Nutrients	100%															
LAR Trash	70%	80%	90%	100%	100%											
Legg Lake Trash	20%	40%	60%	80%	100%											
LAR Metals (Dry)	50%							75%		100%						
LAR Metals (Wet)	25%					31%				50%		100%				
LAR Bacteria (Wet)																100%
Harbor Toxics														100%		

Table A-37: *TMDL deadlines for the LA River (LAR), Legg Lake, and the Los Angeles Harbor that are applicable in the Upper LA River Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Upper Los Angeles River Watershed Management Area will pass in 2037.

FIB levels are relatively low in the upstream areas and tributaries of the Los Angeles River Watershed near the San Gabriel Mountains, but are high in the LA River mainstream within the Upper Los Angeles River Watershed, with significant input from the local MS4s.[228] Additionally, water in the Los Angeles River Watershed has shown a significant positive trend in the concentrations of heavy metals such as copper, lead, zinc, and aluminum between 2002 and 2017.[229]

Progress towards Upper Los Angeles River EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed in Reporting Year	1,197[230]	4.14[231] (0.02 AF)[232]	20[233]	33.48[234]	18.82[235]
Completed Since 12/28/12	2,916[236]	NA[237] (7.93 AF)[238]	63[239]	3,151.89[240]	141.28[241]
Proposed (By 2028[242])	NA[243]	NA[244] (1,196 AF)[245]	NA[246]	NA[247]	3,968[248]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-38: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurements of progress that were provided in comparable units to an established goal were the retention capacity (AF) from green streets specifically, and the "Total Retention Capacity (AF)." See the endnotes on page A-63 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that 63 "other projects" were completed since 12/28/12.[239] The Annual Report did not identify any regional projects that were completed, although at least seven regional projects were in progress, as of December 2018.[249] 128 projects were proposed in the EWMP: 16 very high priority, 93 high priority, and 19 medium priority.[250]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2017 Interim Retention Capacity Goal (AF)	2028 Interim Retention Capacity Goal (AF)	2037 Final Retention Capacity Goal (AF)	% Complete Towards 2017 Interim Goal	% Complete Towards 2028 Interim Goal	% Complete Towards 2037 Final Goal
141.28[241]	431[251]	3,968[248]	5,191[252]	32.78%[253]	3.56%[254]	2.72%[255]

Table A-39: *Assessment by retention capacity (AF).* The total retention capacity is a better measurement of overall progress than the retention capacity achieved through green streets alone. Therefore, the total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-39 to the 2017 and 2028 interim goals, and the 2037 final goal, all derived from information in the EWMP. The percentage complete towards the 2017 and 2028 interim goals, and percentage complete towards the 2037 final goal are expressed visually in Figure A-20. See the endnotes on page A-63 for more detail about where each of these values is derived.

Overall Progress towards Upper Los Angeles River EWMP Goals

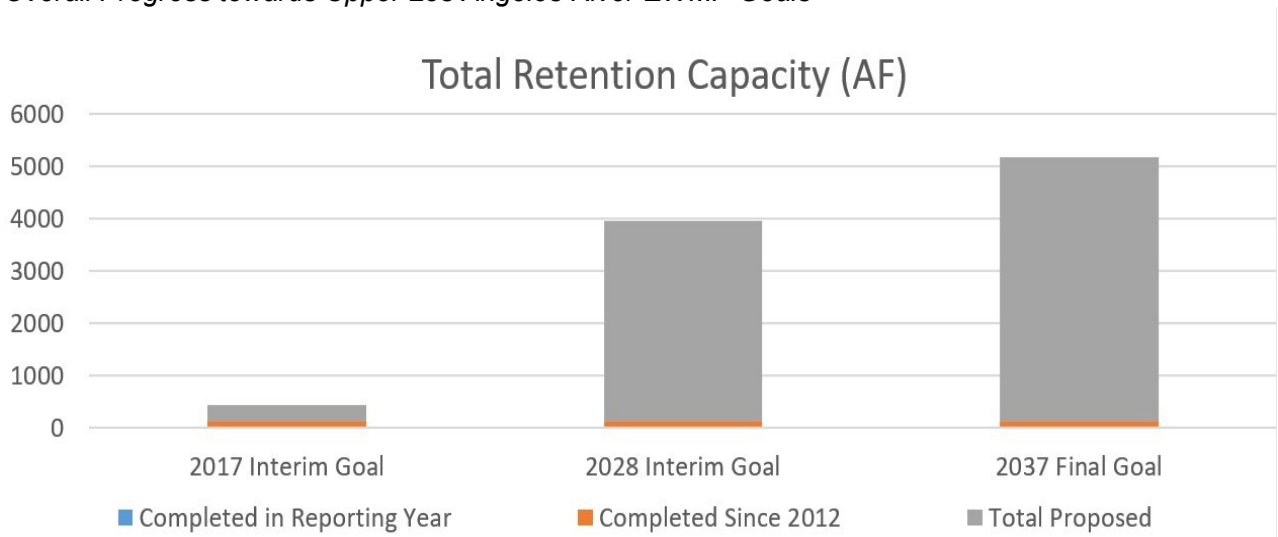

Figure A-20: *Overall progress towards interim and final goals for total retention capacity (AF).* The Upper Los Angeles River Watershed Management Group has achieved a retention capacity of 18.82 AF in the 2017-2018 reporting year (in blue, though this small number is not visible in figure A-20), for a total retention capacity of 141.28 AF since 12/28/12 (in orange). This falls short of even the 2017 interim goal which has already passed, and leaves a retention capacity of 3,826.72 AF to be achieved by 2028 and a total retention capacity of 5,049.72 AF to be achieved by 2037 (in grey).

We attempted to assess progress based on the number of regional projects completed, but this was not possible for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects,” without the additional information necessary to understand which 63 “other projects” were completed. And second, the Upper Los Angeles River Watershed Management Group relied heavily on private regional projects, which were not possible to track without additional information provided in the Annual Report. Therefore, we were not able to assess compliance based on regional projects completed in the Upper Los Angeles River Watershed Management Area.

Therefore, our assessment of progress under the Upper Los Angeles River EWMP was based on retention capacity (AF) and not on the number of regional projects completed. As of December 2018, the Upper Los Angeles River Watershed Management Group achieved a retention capacity of 141.28 AF since 12/28/12, which is 2.72% complete towards the 2037 final retention capacity goal of 5,191 AF. This group is out of compliance with its 2017 deadline. Additionally, there remains a retention capacity of 3,826.72 AF to be achieved by 2028 and a total retention capacity of 5,049.72 AF to be achieved by 2037. If the current rate of implementation continues, the final 2037 EWMP goal will not be achieved until the year 2233 (Table 1), and the Upper Los Angeles River Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Upper Los Angeles River EWMP[256]

Project Name	Lead	Status	(Estimated) Completion Date
Albion Riverside Park	Los Angeles	Design	Dec-18
Rory M. Shaw Wetlands Park	Los Angeles	Design	Jul-19
Agnes Ave and Vanowen to Kittridge	Los Angeles	Planning	Dec-18
Lankershim Blvd (CD2 Chandler & Victory)	Los Angeles	Design	Dec-18
Whitnall Gardens Stormwater Capture	Los Angeles	Design	Apr-19
Whitnall Highway Power Line Easement Capture Project	Los Angeles	Design	Dec-18
Aliso Wash - Limekiln Creek Confluence Restoration	Los Angeles	Pre-Design	Sep-19
Avalon North Green Alley	Los Angeles	Construction	Jul-17
Branford Street - Laure Canyon to Pacoima Wash	Los Angeles	Planning	Dec-18
Van Nuys Blvd (CD7 Laurel Canyon Bldg. & San Fernando Road)	Los Angeles	Design	Dec-18
Glenoaks and Fillmore	Los Angeles	Planning	Dec-18
Taylor Yard River Project	Los Angeles	Planning	(Not Reported)
Hermon Park Urban Runoff Project	Los Angeles	Design	2021
Sycamore Grove Urban Runoff Project	Los Angeles	Design	2021
Mission Road Urban Runoff Project	Los Angeles	Design	2021
2nd St and Santa Fe Urban Runoff Project	Los Angeles	Design	2021
Palmetto and Santa Fe Urban Runoff Project	Los Angeles	Design	2021
Watts Green streets Implementation Plan Phase II	Los Angeles (Grant Housing & Economic Development Co.)	Design	2019
Central Jefferson Alley Project	Los Angeles (Trust for Public Land)	Design	(Not Reported)
Bradley Green Alleys	Los Angeles (Pacoima Beautiful)	Design	2019
Foothill Link Bikeway and Pedestrian Greenbelt	La Cañada Flintridge	Design	Aug-19

San Fernando Regional Park Project	San Fernando	Design	Fall 2021
Buena Vista BMP parking lot retrofits	Burbank	Conceptual	(Not Reported)
McCambridge Park regional BMP	Burbank	Conceptual	(Not Reported)
Malibu Hills Road Stormwater Enhancement Project	Calabasas	Design	Jul-20
Parkway Calabasas Green Street Project	Calabasas	Conceptual	Oct-19
Calabasas Road Green Street Project	Calabasas	Conceptual	Jan-20
Old Town Calabasas Green Street Project	Calabasas	Conceptual	Jan-19
Las Virgenes Road Green Street Project	Calabasas	Design	Jan-19
Distributed Dry Wells	Glendale	Conceptual	2018-2019
Western/Riverside Drive Bioswales	Glendale	Design	2018-2019
Public Parking Lot Retrofit	Temple City	Construction	2017-2018
City is partnering, along with Montebello, in the County-led East LA Median Regional BMP Project.	Monterey Park	Design	2019
Merced Avenue Greenway	South El Monte	Design	2018-2019
Stoneman Public Parking Lot Retrofit	Alhambra	Conceptual	2018
Montezuma Public Parcel Retrofit	Alhambra	Conceptual	(Not Reported)
Ramona Public Parcel Retrofit	Alhambra	Conceptual	(Not Reported)
Main Street Demonstration Green Street	Alhambra	Conceptual	(Not Reported)
Caltrans ROW New Ave Off-ramp	Alhambra	Conceptual	(Not Reported)
Alhambra Golf Course	Alhambra	Conceptual	(Not Reported)
East Los Angeles Sustainable Median Stormwater Capture Project	County	Design	Oct-19

Roosevelt Park Stormwater Capture Project	County	Design	Jun-19
Earvin Magic Johnson Park Phase 1A Project	County	Design	2020
Earvin Magic Johnson Park Phase 2 Project	County	Planning	(Not Reported)
Obregon Park Stormwater Capture Project	County	Planning	(Not Reported)
5 Green Streets Projects	County	Planning	(Not Reported)
Desiderio Neighborhood Park	Pasadena	Planning	2018-2019
Marshall Community Park	San Gabriel	Construction	2017-2018

Table A-40: *A summary of the status of multi-year projects as of December 2018.*

Projects listed with a status of planning, pre-design, design, or construction as of December 2018 were not yet retaining stormwater or dry weather runoff because the projects were not yet complete. This is a list of only the highest priority projects listed in the Annual Report. Therefore, even if all listed projects are completed, the final AF goal will still not be achieved without additional projects. The current rate of implementation is insufficient to achieve the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Upper Los Angeles River Watershed Management Group will do to improve this implementation rate.

[227] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report).303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[228] Heal the Bay. *River Report Card 2018.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/05/River-Report-Card-2018_final.pdf
[229] Eisenhardt L. and Mueller S. *Los Angeles County Municipal Separate Storm Sewer System (MS4) Time Series Analysis, 2002-2015 [report].* [Santa Barbara, CA]: Bren School of Environmental Science and Management, University of California Santa Barbara; 2018.
[230] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-5 – C-9, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[231] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-19 – C-23, Table 2e. This value was only for the "Type of Project: Green Streets." Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[232] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-19 – C-23, Table 2e. This value was only for the "Type of Project: Green Streets." Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[233] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-5 – C-9, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[234] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-5 – C-9, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[235] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-5 – C-9, Table 2a. It is assumed that this number represents AF of runoff addressed, including runoff captured, treated, and infiltrated. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[236] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-10 – C-16, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[237] Not reported. Progress was reported in AF (see Endnote 238), but not in number of miles completed.
[238] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-81 – C-90, Table 3. Table 3 includes "implementation progress." The report does not specify the timeframe for the progress, so we assume it is progress since 2012 given that the total presented is larger than the total for the current reporting year in Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[239] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-10 – C-16, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[240] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-10 – C-16, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[241] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-10 – C-16, Table 2b. It is assumed that this number represents AF of runoff addressed, including runoff captured, treated, and infiltrated. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[242] The EWMP Implementation Strategy is based on the 2028 retention capacity goal, although there is a separate final 2037 retention capacity goal.
[243] Not specified in the EWMP.

[244] Not specified in the EWMP. A goal was specified in AF (see Endnote 245), but not in number of miles completed.
[245] Enhanced Watershed Management Program for the Upper Los Angeles River Watershed (Jan. 2016), page ES-9. This value is from the green portion of the graph for "Green Streets" under the 2028 interim goal, which is the same for the 2037 final goal. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/los_angeles/upper_losangeles/20160127/UpperLARiver_mainbody_revEWMP_Jan2016.pdf
[246] Not specified in the EWMP.
[247] Not specified in the EWMP.
[248] Enhanced Watershed Management Program for the Upper Los Angeles River Watershed (Jan. 2016), pages ES-7, ES-9. This value is calculated by adding the numbers from each project category for the 2028 interim deadline, which the current implementation plan is formed around to address limiting pollutants of zinc and *E. coli*. More will need to be implemented by 2037 to address bacteria. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/los_angeles/upper_losangeles/20160127/UpperLARiver_mainbody_revEWMP_Jan2016.pdf
[249] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report, page 33. "More than seven" regional projects are currently in progress, but the Annual Report does not identify any regional projects that were completed. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[250] Enhanced Watershed Management Program for the Upper Los Angeles River Watershed (Jan. 2016), page ES-7. 16 very high priority, 93 high priority, and 19 medium priority were identified. The number of private regional projects proposed was not determined for the EWMP. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/los_angeles/upper_losangeles/20160127/UpperLARiver_mainbody_revEWMP_Jan2016.pdf
The private regional projects will be designed to capture 27% of the required volume capacity to be achieved by 2028. Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report Appendix K, page 12. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[251] Enhanced Watershed Management Program for the Upper Los Angeles River Watershed (Jan. 2016), page ES-9. This value is calculated by adding the numbers from each project category for the 2017 interim deadline. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/los_angeles/upper_losangeles/20160127/UpperLARiver_mainbody_revEWMP_Jan2016.pdf
[252] Enhanced Watershed Management Program for the Upper Los Angeles River Watershed (Jan. 2016), pages ES-8 and 7-4. This value was calculated by adding all Total Capacity numbers for each jurisdiction, provided in bold, black print. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/los_angeles/upper_losangeles/20160127/UpperLARiver_mainbody_revEWMP_Jan2016.pdf
[253] =(141.28/431)*100%
[254] =(141.28/3,968)*100%
[255] =(141.28/5,191)*100%
[256] Upper Los Angeles River Watershed Management Area FY 2017-2018 Annual Report Appendix C - Watershed WRAMPS Form (Reporting Year 2017-18), pages C-95 – C-100. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

UPPER SAN GABRIEL RIVER WATERSHED MANAGEMENT GROUP

Upper San Gabriel River Watershed Management Area

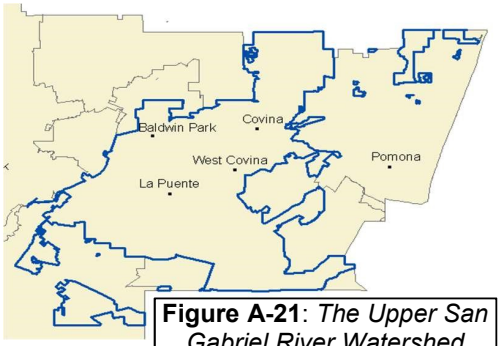

Figure A-21: *The Upper San Gabriel River Watershed Management Area*

The Upper San Gabriel River Watershed Management Area covers most of the northern San Gabriel River Watershed except for the area covered under the Rio Hondo / San Gabriel River Watershed Management Area. The Upper San Gabriel River Watershed Management Group includes the Cities of Baldwin Park, Covina, Glendora, Industry, La Puente, West Covina, and South El Monte; Unincorporated County of Los Angeles; and the Los Angeles County Flood Control District (Figure A-21).

Water Quality in the Upper San Gabriel River Watershed Management Area

Waterbodies in the Upper San Gabriel River Watershed Management Area are listed by the State Board as impaired by heavy metals, toxicity, and FIB, among other contaminants.[257] At least five Regional TMDLs apply to the Upper San Gabriel River Watershed Management Area (Table A-41).

TMDL	TMDL Deadlines														
	2012	..	2015	2016	2017	..	2020	…	2023	…	2026	…	2032	…	2036
SGR Metals (Dry)					30%		70%		100%						
SGR Metals (Wet)					10%		35%		65%		100%				
Harbor Toxics															100%
LA Area Lakes															100%
SGR Bacteria													100%		

Table A-41: *TMDL deadlines for the San Gabriel River (SGR) and the LA Area Lakes that are applicable in the Upper San Gabriel River Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Upper San Gabriel River Watershed Management Area will pass in 2036.

Heal the Bay's 2018 River Report Card showed fairly good water quality within the San Gabriel River Watershed, although there were some exceedances of FIB limits.[258] Overall, 84% of samples from the San Gabriel River Watershed were good (green), 11% were moderate (yellow), and 5% were poor (red). However, the trend in the Los Angeles River watershed is that FIB exceedance rates were lower in the San Gabriel Mountains and significantly higher within the basin. No samples were analyzed within the basin in the San Gabriel River Watershed, so the high grades may be a result of the location of the sampling sites (near the San Gabriel Mountains).[258] There is also evidence that FIB concentrations increased in wet weather, and that concentrations of heavy metals increased in both wet and dry weather throughout the San Gabriel River Watershed from 2002-2017.[259]

Progress towards the Upper San Gabriel River EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects*	Area Addressed (acres)	Total Retention Capacity (AF)
Completed In Reporting Year	51[260]	0[261]	0[262]	69.85[263]	5.19[264]
Completed Since 12/28/12	190[265]	NA[266] (0.51 AF)[267]	57[268]	286.05[269]	13.41[270]
Proposed	NA[271] (164 AF)[272]	349[273] (258 AF)[274]	NA[275]	NA[276]	1,182.59[277]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-42: *Summary of projects completed as of December 2018*. All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurements that were provided in units comparable to an established goal were the retention capacity (AF) for green streets specifically, and the "Total Retention Capacity" (AF). See the endnotes on page A-69 for more detail about where each of these values was derived.

Regional Projects

The Annual Report stated that 57 "other projects" were completed since 12/28/12.[268] The County of Los Angeles was the lead jurisdiction on 56 of these projects. However, regional projects were not reported separately in the Annual Report, so we were unable to determine if any regional projects were completed based on the information provided in the Annual Report. A total of eight "signature (or example)" regional projects were proposed in the EWMP.[278]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2017 Interim Retention Capacity Goal (AF)	2020 Interim Retention Capacity Goal (AF)	2036 Final Retention Capacity Goal (AF)	% Complete Towards 2017 Interim Goal	% Complete Towards 2020 Interim Goal	% Complete Towards 2036 Final Goal
13.41[270]	0.03[279]	108.84[280]	1,182.59[277]	44,700%[281]	12.32%[282]	1.13%[283]

Table A-43: *Assessment by retention capacity (AF)*. The total retention capacity completed since 12/28/12, reported in the Annual Report, is compared in Table A-43 to the 2017 and 2020 interim goals, and to the 2036 final goal, all derived from information in the EWMP. The percentage complete towards the 2020 interim goal and percentage complete towards the 2036 final goal are expressed visually in Figure A-22. See the endnotes on page A-69 for more detail about where each of these values was derived.

Overall Progress towards Upper San Gabriel River EWMP Goals

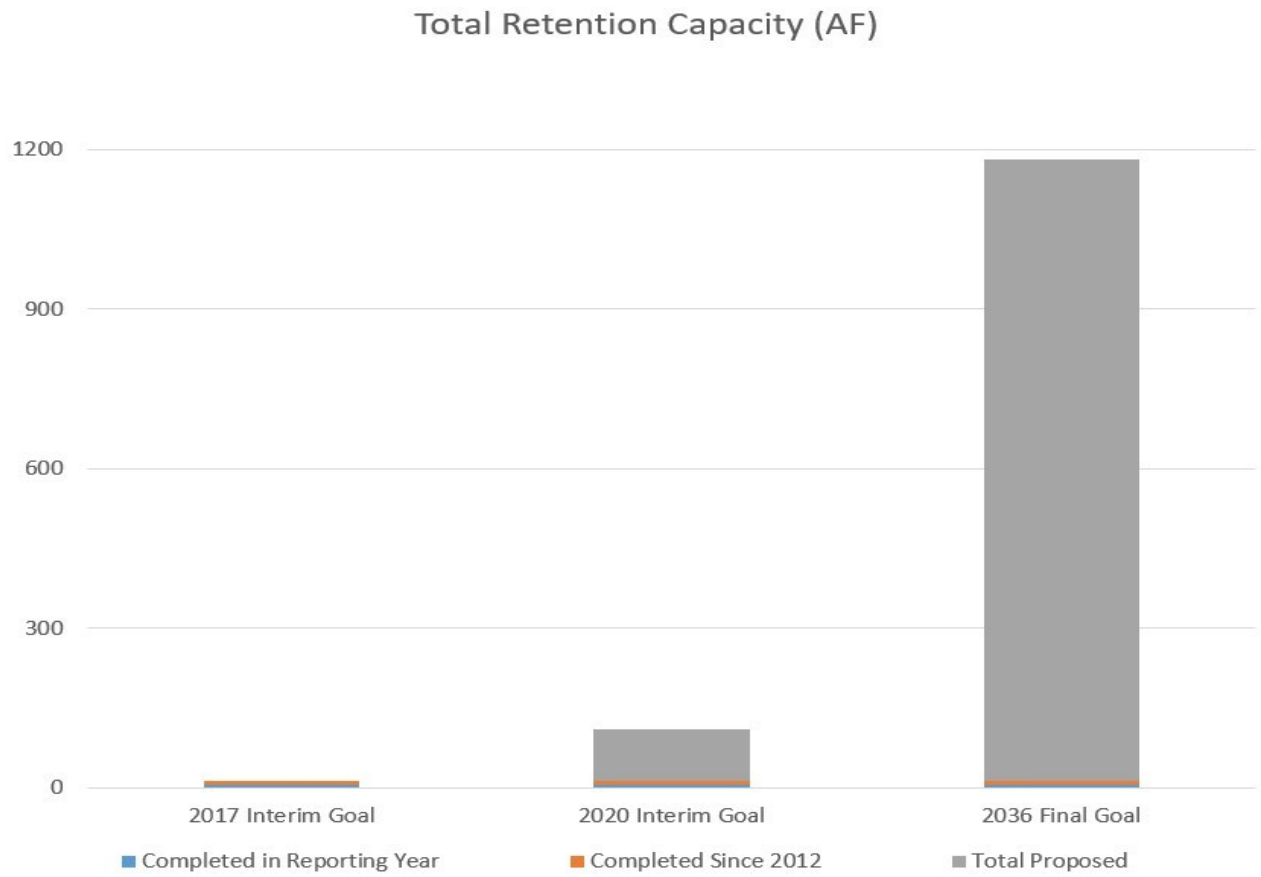

Figure A-22: *Overall progress towards interim and final goals for total retention capacity (AF)*. The Upper San Gabriel River Watershed Management Group achieved a retention capacity of 5.19 AF in the 2017-2018 reporting year (in blue), for a total retention capacity of 13.41 AF since 12/28/12 (in orange). This surpasses the 2017 interim retention capacity goal of 0.03 AF, but leaves a retention capacity of 95.43 AF to be achieved by 2020, and a total retention capacity of 1,169.18 AF of to be achieved by 2036 (in grey).

We attempted to assess progress based on the number of regional projects completed, but this was not possible for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” And second, we were not able to find the necessary information to conduct outside research. Based on our review, we were unable to determine whether any regional projects were completed since the effective date of the Permit (12/28/12).

Therefore, our assessment of progress under the Upper San Gabriel River EWMP was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Upper San Gabriel River Watershed Management Group achieved a retention capacity of 13.41 AF since 12/28/12, which is 1.13% complete towards the 2036 final goal of 1,182.59 AF (Table A-43, Figure A-22). This group is in compliance with its 2017 interim deadline. However, there remains a retention capacity of 95.43 AF to be achieved by 2020, and a total retention capacity of 1,169.18 AF to be achieved by 2036. If the current rate of implementation continues, the final 2036 EWMP goal will not be achieved until the year 2542 (Table 1), and the Upper San Gabriel River Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Efforts for the Upper San Gabriel River EWMP[284,285]

Project Name	Lead	Status[284]	(Estimated) Completion Date[285]
Barnes Park	Baldwin Park	Concept	December 2023
Wingate Park (formerly Kahler Russell Park)	Covina	Concept	December 2023
Finkbiner Park	Glendora	Concept	(Not Reported)
Downtown Properties	Glendora	(Not Reported)	December 2023
San Angelo Park	Industry	Concept	2020
La Puente Park	La Puente	Concept	December 2023
Cortez Park	West Covina	Concept	(Not Reported)
Bassett High School	LA County	Concept	(Not Reported)
Bassett Park	LA County	Concept	December 2023
Allen J Martin Park	LA County	Concept	December 2023
Adventure Park (aka Gunn Avenue Park)	LA County	Concept	December 2020

Table A-44: *A summary of the status of "priority" multi-year projects as of December 2018.*

Nearly seven years after Permit adoption in December 2012, ten proposed projects remain in the concept phase. Without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Upper San Gabriel River Watershed Management Group will do to improve this implementation rate.

[257] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
[258] Heal the Bay. *River Report Card 2018.* 2019. Available at: https://healthebay.org/wp-content/uploads/2019/05/River-Report-Card-2018_final.pdf
[259] Eisenhardt L. and Mueller S. *Los Angeles County Municipal Separate Storm Sewer System (MS4) Time Series Analysis, 2002-2015 [report].* [Santa Barbara, CA]: Bren School of Environmental Science and Management, University of California Santa Barbara; 2018.
[260] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[261] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 6, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[262] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[263] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[264] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 4, Table 2a. It is assumed that this number represents AF of runoff addressed, including runoff captured, treated, and infiltrated. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[265] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[266] Not reported. Progress was reported in AF (see Endnote 267), but not in number of miles completed.
[267] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 11, Table 3. This value was calculated by adding all of the total numbers listed for green streets. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[268] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[269] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 5, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[270] Upper San Gabriel River Watershed Management Group Annual Report 2017/18, page 5, Table 2b. It is assumed that this number represents AF of runoff addressed, including runoff captured, treated, and infiltrated. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[271] Not specified in the EWMP. The goal was specified in AF (see Endnote 272), but not in number of projects completed.
[272] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), page 101, Figure 5-1. This number was calculated by adding all LID Structural Control Measure to be Implemented by 2036. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf
[273] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), Appendix C-5, page C-5-1, table C-5-1. This number was calculated by adding up the "total approximate miles of green street BMPs" for the final bacteria TMDL deadline, which is inclusive of the requirements for other TMDL deadlines. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf

[274] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), page 101, Figure 5-1. This value was calculated by adding up all of the values for Total Capacity provided in bold, black print. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf
[275] Not specified in the EWMP.
[276] Not specified in the EWMP.
[277] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), page 108, table 5-1. This was calculated by adding up the 2036 final bacteria goals for all jurisdictions. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf
[278] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), page 51, Table 3-4. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf
[279] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), pages 109-112, Figure 5-6. This value was calculated by adding up all of the numbers listed for each project category under the 2017 interim deadline. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf
[280] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), page 108, Table 5-1. This was calculated by adding up the 2020 interim goals for all jurisdictions. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf
[281] =(13.41/0.03)*100%
[282] =(13.41/108.84)*100%
[283] =(13.41/1,182.59)*100%
[284] Upper San Gabriel River Watershed Management Group Annual Report 2017/18 (2018), page 7. This report was submitted in December, 2018, and yet the items that were anticipated to be completed by the end of 2018 are not identified as completed in this report. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html
[285] Upper San Gabriel River EWMP Group Enhanced Watershed Management Program Plan (Jan. 2016), page 51, Table 3-4. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/upper_san_gabriel/USGRRevisedEWMP_20160114.pdf

UPPER SANTA CLARA RIVER WATERSHED MANAGEMENT GROUP

Upper Santa Clara River Watershed Management Area

The Upper Santa Clara River Watershed Management Area is located in the northwest corner of Los Angeles County within the Santa Clara River Watershed. The western boundary of the Upper Santa Clara River Watershed Management Area ends at the Ventura County line. The Upper Santa Clara River Watershed Management Group includes the City of Santa Clarita, Unincorporated County of Los Angeles, and the Los Angeles County Flood Control District (Figure A-23).

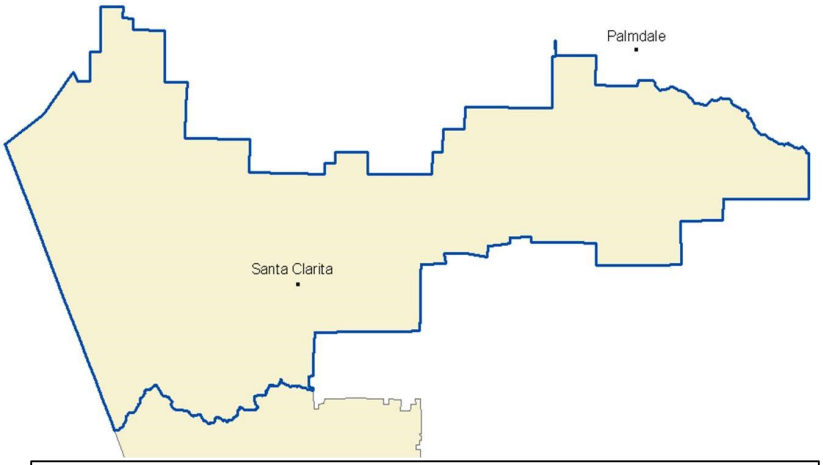

Figure A-23: *The Upper Santa Clara River Watershed Management Area*

Water Quality in the Upper Santa Clara River Watershed Management Area

Waterbodies in the Upper Santa Clara River Watershed Management Area are listed by the State Board as impaired by salt, bacteria, nutrients, and trash, among other contaminants.[286] At least five regional TMDLs apply to the Upper Santa Clara River Watershed Management Area (Table A-45).

TMDL	TMDL Deadline								
	2012	2013	2014	2015	2016	…	2023	…	2029
USCR Salt	100%								
USCR Bacteria (Dry)							100%		
USCR Bacteria (Wet)									100%
USCR Nutrients	100%								
USCR Trash	20%	40%	60%	80%	100%				

Table A-45: *TMDL deadlines for the Upper Santa Clara River (USCR) that are applicable in the Upper Santa Clara River Watershed Management Area.* The percentages listed in the table are percent load reduction goals for each contaminant. Deadlines designated by "100%" represent a deadline to fully address a particular contaminant. The final deadline for pollutants in the Upper Santa Clara River Watershed Management Area will pass in 2029.

Progress towards the Upper Santa Clara River EWMP Goals

Projects Completed

All Projects

	# New/Redevelopment Projects	# Miles of Green Streets	# Other Projects	Area Addressed (acres)	Total Retention Capacity (AF)
Completed In Reporting Year	10[287]	NA[288]	0[289]	47.68[290]	6.23[291]
Completed Since 12/28/12	51[292] (6.19 AF[293])	0[294]	1[295]	480.07[296]	25.10[297]
Proposed	NA[298] (277.1 AF)[299]	NA[300] (77.9 AF)[301]	NA[302]	NA[303]	622.2[304]

** "Other Projects" is not defined. For the purposes of this report, it is assumed that this category includes green streets, regional projects, low flow diversions, and other retrofits, but not new/redevelopment projects.*

Table A-46: *Summary of projects completed as of December 2018.* All information about progress "Completed In [2017-2018] Reporting Year" and progress "Completed Since 12/28/12" was collected from the Annual Report and associated attachments. The "Proposed" values represent the goals against which this progress was measured; these goals were derived from information in the EWMP. The only measurement of progress that was provided in comparable units to an established goal was the "Total Retention Capacity (AF)." See the endnotes on page A-75 for more detail about where each of these values was derived

Regional Projects

The Annual Report stated that one "other project" was completed since 12/28/12. However, regional projects were not reported separately in the Annual Report, so we were unable to determine whether any regional projects were completed based on the information provided in the Annual Report. With no reported completed regional projects, we determined that no regional projects were completed since 12/28/12, and therefore no regional projects were completed in the reporting year; a total of 16 Tier A regional projects were proposed in the EWMP (Figure A-24A).[305]

Retention Capacity (AF)

Total Retention Capacity Since 12/28/12 (AF)	2020 Interim Retention Capacity Goal (AF)	2029 Final Retention Capacity Goal (AF)	% Complete Towards 2020 Interim Goal	% Complete Towards 2029 Final Goal
25.10[297]	101.6[306]	622.2[304]	24.70%[307]	4.03%[308]

Table A-47: *Assessment by retention capacity (AF).* The total retention capacity since 12/28/12, reported in the Annual Report, is compared in Table A-47 to the 2020 interim goal and the 2029 final goal, both derived from information in the EWMP. The percentage complete towards the 2020 interim goal and percentage complete towards the 2029 final goal are expressed visually in Figure A-24B. See the endnotes on page A-75 for more detail about where each of these values was derived.

Overall Progress towards Upper Santa Clara River EWMP Goals

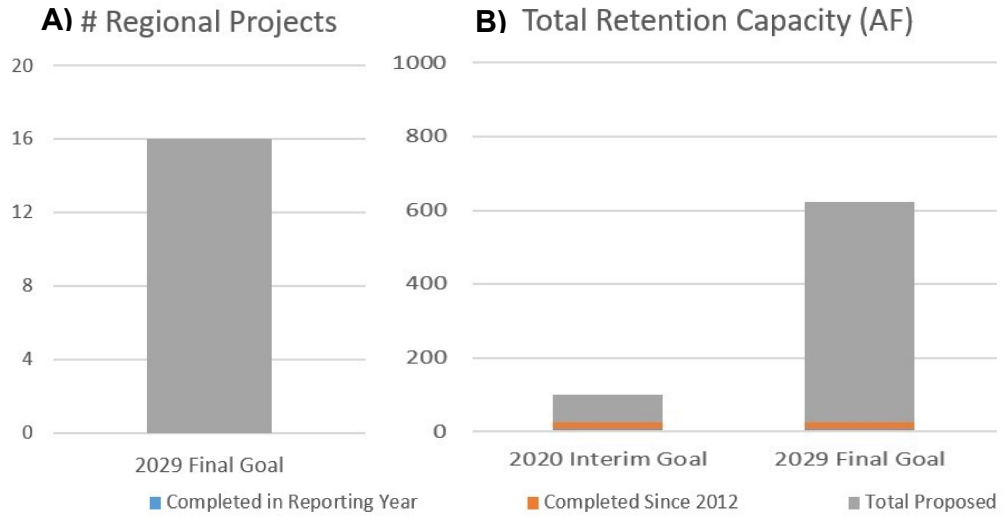

Figure A-24A: P*rogress towards the final goal for number of regional projects completed.* No regional projects were completed in the 2017-2018 reporting year, or since 12/28/12. A total of 16 regional projects were proposed in the EWMP, leaving all 16 to be completed by 2029 (in grey).
Figure A-24B: *Overall progress towards interim and final goals for total retention capacity (AF).* The Upper Santa Clara River Watershed Management Group achieved a retention capacity of 6.23 AF in the 2017-2018 reporting year (in blue), for a total retention capacity of 25.10 AF since 12/28/12 (in orange). This leaves a retention capacity of 76.50 AF to be achieved by 2020, and a total retention capacity of 597.10 AF to be achieved by 2029 (in grey).

We attempted to assess progress based on the number of regional projects completed (Figure A-24A), but this was difficult for several reasons. First, regional projects were not reported separately, but rather lumped into “other projects.” And second, we were not able to find the necessary information to conduct outside research. Based on our review, we determined that zero of 16 originally proposed regional projects were completed since the effective date of the Permit (12/28/12). However, based on the many challenges described above, these numbers remain uncertain.

Therefore, our assessment of progress under the Upper Santa Clara River EWMP was based on retention capacity (AF) and not the number of regional projects completed. As of December 2018, the Upper Santa Clara River Watershed Management Group achieved a retention capacity of 25.10 AF since 12/28/12, which is 4.03% complete towards the 2029 final retention capacity goal of 622.2 AF (Table A-47, Figure A-24B). This leaves a retention capacity of 76.50 AF to be achieved by 2020, and a total retention capacity of 597.10 AF to be achieved by 2029. If the current rate of implementation continues, the final 2029 EWMP goal will not be achieved until the year 2161 (Table 1), and the Upper Santa Clara River Watershed Management Group will be out of compliance with applicable TMDLs when the final deadline passes, prolonging the risks to public and environmental health that result from stormwater pollution.

Status of Multi-Year Projects for the Upper Santa Clara River EWMP[309]

Project Name	Lead	Status	(Estimated) Completion Date
Newhall Memorial Park	Santa Clarita	(Not Reported)	(Not Reported)
Regional BMP #2	Santa Clarita	(Not Reported)	(Not Reported)
Regional BMP # 3	Santa Clarita	(Not Reported)	(Not Reported)
Regional BMP # 4	Santa Clarita	(Not Reported)	(Not Reported)
Median Beautification Plan (Green Streets Project)	Santa Clarita	Project Planning	(Not Reported)

Table A-48: *A summary of the status of multi-year projects as of December 2018.*

Nearly seven years after Permit adoption in December 2012, only one “other project” was completed, one was in the planning phase and four proposed projects have not been started at all. Without an estimated retention capacity for each project, it is not clear that the final AF goal will be reached even if all listed projects are completed. The current rate of implementation is insufficient to reach the final AF goal before the deadline passes, and the current reporting format does not provide enough information to determine what the Upper Santa Clara River Watershed Management Group will do to improve this implementation rate.

[286] *Impaired Water Bodies: Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305 (b) Report). 303(d) list – Excel File (includes potential sources).* California Environmental Protection Agency, State Water Resources Control Board. Updated: 4/2/19. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

[287] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[288] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 7, Table 2e. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[289] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[290] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[291] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 4, Table 2a. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[292] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[293] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 6, Table 2c. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[294] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 13, Table 3-1, listing zero AF of green street storage capacity under "storage capacity of implemented structural control measures;" we assumed this meant implemented during the permit term. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[295] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[296] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[297] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, page 6, Table 2b. Available for download at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

[298] Not specified in the EWMP. The goal was specified in AF (see Endnote 299), but not in number of projects completed.

[299] Upper Santa Clara River Watershed Enhanced Watershed Management Program, (Feb. 2016), page 7-24, Table 7-6. This number is calculated by adding up all total LID values listed in Table 7-6. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_clara/upper/UpperSantaClaraRiver_EWMP1_%20rev2-2016.pdf

[300] Not specified in the EWMP. The goal was specified in AF (see Endnote 301), but not in number of miles completed.

[301] Upper Santa Clara River Watershed Enhanced Watershed Management Program, (Feb. 2016), page 7-24, Table 7-6. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_clara/upper/UpperSantaClaraRiver_EWMP1_%20rev2-2016.pdf
[302] Not specified in the EWMP.
[303] Not specified in the EWMP.
[304] Upper Santa Clara River Watershed Enhanced Watershed Management Program, (Feb. 2016), page 7-24, Table 7-6. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_clara/upper/UpperSantaClaraRiver_EWMP1_%20rev2-2016.pdf
[305] Upper Santa Clara River Watershed Enhanced Watershed Management Program, (Feb. 2016), Appendix C, page C3-13, Figure C3-6. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_clara/upper/UpperSantaClaraRiver_EWMP1_%20rev2-2016.pdf
[306] Upper Santa Clara River Watershed Enhanced Watershed Management Program, (Feb. 2016), page 7-24, Table 7-6. This number was calculated by adding up the 2020 milestones for both jurisdictions. While Permittees recognized a 2017 milestone, they did not report adding any BMP capacity to meet that milestone. See page 7-21, table 7-3 and page 7-24, table 7-6. Available at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/santa_clara/upper/UpperSantaClaraRiver_EWMP1_%20rev2-2016.pdf
[307] =(25.10/101.6)*100%
[308] =(25.10/622.2)*100%
[309] Upper Santa Clara River Watershed Annual Report 2017/18 Reporting Year, pages 8 and 9. Available for download at:
https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/annual_reports.html

Appendix B

Proposed Reporting Format
Example for
The Malibu Creek Watershed Management Group

Project Status										
Jurisdiction	**Name of Project**	**Type of Project**	**Subwatershed**	**Project Information**	**Status**	**Project Capacity - Proposed in MWP/EWMP (AF)**	**Project Capacity - Proposed in Reporting Year (AF)**	**Current Project Capacity (AF)**	**(Expected) Completion Date**	**On Schedule (as proposed in the WMP/EWMP)**
Calabasas	Las Virgenes Creek Restoration Project – Phase II	(Not Reported)	Lower Las Virgenes Creek	**Location/Lat-Long:** 34.1435, -118.7008 **Description:** Restoration Project - Phase 1 replaced a concrete channel with native habitat; phase 2 will stabilize and restore 1.5 miles of creek **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	IMPLEMENTATION	(Not Reported)	(Not Reported)	(Not Reported)	Fall 2018	(Not Reported)
Calabasas	Citywide Green Streets Project	Green Street	Las Virgenes Creek	**Location/Lat-Long:** 34.1349, -118.663 **Description:** Five green streets projects **Total Estimated Project Cost:** **Funding Status:** Two grant applications pending **Community Benefits:**	PLANNING / DESIGN / CONSTRUCTION	(Not Reported)	(Not Reported)		Dependent on funding; Late 2019/Early 2020	(Not Reported)
Los Angeles County and Calabasas	Gates Canyon Park (LVC-14)	Regional Project	Las Virgenes / Malibu Creek	**Location/Lat-Long:** 34.162073, -118.69159 **Description:** Residential development runoff capture for park irrigation **Total Estimated Project Cost:** **Funding Status:** $3.3 million Prop 1 grant **Community Benefits:**	DESIGN COMPLETE	(Not Reported)	(Not Reported)		Summer 2019	N (12/2017 proposed in EWMP)
Los Angeles County	Mulholland Hwy at Careful et Al Super Green Streets (TC-02)	Regional Project	Triunfo Canyon Creek / Malibu Creek	**Location/Lat-Long:** 34.12799, -118.75612 **Description:** Capture of street flows and diversion of storm drains to biofiltration and infiltration chambers **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	CONCEPT	(Not Reported)	(Not Reported)		02/2021	Y (07/2021 proposed in EWMP)
Los Angeles County	Wagon Road Low Flow Diversion	(Not Reported)	Medea Creek / Malibu Creek	**Location/Lat-Long:** 34.112928, -118.77629 **Description:** Diverts urban and stormwater runoff from nearby unincorporated communities to the sanitary sewer system **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	CONCEPT	(Not Reported)	(Not Reported)		10/2020	(Not Reported)
Westlake Village	Ridgeford Project (TC-37)	Regional Project	Triunfo Canyon Creek	**Location/Lat-Long:** 34.132881, -118.821513 **Description:** Treat and infiltrate drainage from developments. The project may be coupled with a park for flood protection and recreation **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	FEASIBILITY STUDY	(Not Reported)	(Not Reported)		TBD	? (07/2021 proposed in EWMP)
Westlake Village	Lindero Linear Park Project	(Not Reported)	Triunfo Canyon Creek	**Location/Lat-Long:** 34.145447, -118.806162 **Description:** Meandering walkway, water efficient plants and vines, new trees, and a stormwater bio-swale to treat stormwater **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	PHASE I CONSTRUCTION	(Not Reported)	(Not Reported)		03/2019	Y

Agoura Hills	Reyes Adobe Green Street Project (LC-02)	Regional Project	Lindero Creek	**Location/Lat-Long:** Reyes Adobe Park and a one mile segment of Reyes Adobe Rd. between Lake Lindero Dr. and Canwood St. **Description:** Construction of medians, bio-retention devices, underground infiltration chambers, rainwater harvesting, cisterns for irrigation, and a drip irrigation system for Reyes Adobe Park and a one-mile segment of Reyes Adobe Road from Lake Lindero Drive to Canwood Street **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	PURSUING FUNDING	(Not Reported)	(Not Reported)		Dependent on Funding	N (12/2017 proposed in EWMP)
Agoura Hills and Los Angeles County	County Yard Treatment Facility (MEC-12)	Regional Project	Medea Creek, Palo Comado Creek	**Location/Lat-Long:** 34.142268, -118.758283 **Description:** Diversion of runoff from the adjacent channel, pretreatment of flows and conveyance of storage, pumping of flows to a treatment system then back to the channel **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	PURSUING FUNDING	(Not Reported)	(Not Reported)		05/2021	(Not Reported)
Westlake Village	TC-35 Infiltration basin within Three Springs Park	Regional Project	(Not Reported)	**Location/Lat-Long:** **Description:** Infiltration basin **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	(Not Reported)	(Not Reported)	(Not Reported)		07/2021	(Not Reported)
Agoura Hills	MEC-09 Infiltration chamber system located within Chumash Park	Regional Project	(Not Reported)	**Location/Lat-Long:** **Description:** Infiltration chamber **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**	(Not Reported)	(Not Reported)	(Not Reported)		12/2021	(Not Reported)
	New / Redevelopment Projects	New / Redevelopment Projects		**Location/Lat-Long:** **Description:** New / redevelopment projects **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**		10.1	(Not Reported)	(Not Reported)	2032	(Not Reported)
	Green Streets	Green Streets		**Location/Lat-Long:** **Description:** Unspecified green streets **Total Estimated Project Cost:** **Funding Status:** **Community Benefits:**		49.3 (unclear if associated with any green streets projects listed above)	(Not Reported)	(Not Reported)	2032	(Not Reported)

* should equal the sum of projected capacity for all projects listed, excluding cancelled projects ** should equal the sum of actual completed capacity for all completed projects Red font indicates that there was insufficient information to properly fill out the table	Final Project Capacity Goal	MET: N	Final Goal* (AF): 96.3	Current Project Capacity**: 0.4	2032	N
	Most Recent Interim Project Capacity Goal	MET: N	Interim Goal (AF): 12	Current Project Capacity**: 0.4	2017	N
	Next Interim Project Capacity Goal	MET: N	Interim Goal (AF): 95.7	Current Project Capacity**: 0.4	2021	N