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FOR REVIEW

DEPARTMENT OF PUBLIC WORKS

December 27, 2018

Deborah Smith, Executive Officer
Los Angeles Regional Water Quality Control Board
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Attention: Renee Purdy / Ivar Ridgeway

Dear Ms. Smith:

REQUEST OF TIME EXTENSION ON BEHALF OF THE COLLECTIVE AGENCIES TO COMPLETE THE IMPLEMENTATION OF LOAD REDUCTION STRATEGIES FOR RIO HONDO

Background

The Los Angeles River Watershed Bacteria Total Maximum Daily Load (Bacteria TMDL) provides the Load Reduction Strategies (LRS) as an optional dry-weather compliance approach. By developing and implementing the optional LRS approach, the Upper Los Angeles River Enhanced Watershed Management Program (ULAR EWMP) Group qualifies for a second phase of Bacteria TMDL implementation, if needed. The original Rio Hondo LRS report was collaboratively developed by the Upper Los Angeles River Watershed Group, Los Angeles River Upper Reach 2 Subwatershed Group, Lower Los Angeles River Watershed Group, and the Cities of El Monte and Irwindale and was submitted to the Los Angeles Regional Water Quality Control Board on March 22, 2016, to address dry weather bacteria discharges in the Los Angeles River Bacteria Total Maximum Daily Load Resolution No. R10-007.

A Rio Hondo LRS Addendum to Revise Actions for Alhambra Wash, Eaton Wash, and Rubio Wash was submitted on October 25, 2017, incorporating comments and feedback received from the Los Angeles Regional Water Quality Control Board staff and featuring a revised implementation approach based on implementing Regional Dry Weather Projects in combination with enhanced source control programs to address discharges to Rio Hondo from three waterbodies (Alhambra Wash, Rubio Wash, and Eaton Wash).

The LRS process is based around identification of, and implementation actions for, two categories of outfalls:

- Priority Outfalls – have relatively consistent, problematic discharges that drive storm drain loading rates above the Wasteload Allocations (WLAs). As such, Priority Outfalls are the highest priority for source abatement and are subject to *specific implementation actions* in the LRS.
- Outlier Outfalls – have episodic, high loading-rate *E. coli* discharges that may cause instances that drive the storm drain *E. coli* loading above the WLA. As such, Outlier Outfalls, which generally exhibit infrequently high loading rates, are subject to *follow-up investigations* during LRS implementation.

The Rio Hondo LRS presented a list of specific implementation actions for "Priority Outfalls" which were identified through an extensive LRS prioritization process that included outfall monitoring, receiving water monitoring, and Monte Carlo modeling. The LRS implementation actions included dry wells, tree wells, infiltration projects (basins, trenches, and galleries), and low flow diversions. The LRS states those actions are subject to adaptive management during the implementation phase. In particular, the LRS states:

Agencies may elect to implement actions that directly improve receiving water quality. The MS4 Permit encourages restoration activities and the Bacteria TMDL describes an alternative downstream-based LRS approach that relies on "downstream solutions" rather than actions at individual outfalls. If a Group determines that downstream solutions are a preferred alternative, the responsible agencies will coordinate closely with the Regional Board regarding the newly selected alternatives and demonstrate its equivalency for attaining the WLA.

The LRS revision document proposed a revised implementation approach based on implementing Regional Dry Weather Projects in combination with enhanced source control programs to address discharges to Rio Hondo from three of the waterbodies in the Rio Hondo LRS —Alhambra Wash, Rubio Wash and Eaton Wash. The proposed regional dry weather projects will address the TMDL WLAs of the Bacteria TMDLS for Rio Hondo and reliably protect the Rio Hondo and the LA River.

Rio Hondo LRS Status

The County of Los Angeles (County), along with the cities of Alhambra, Monterey Park, Pasadena, Rosemead, San Gabriel, San Marino, South Pasadena, and Temple City, are preparing design plans to construct three regional projects at Alhambra Wash, Eaton Wash, and Rubio Wash, upstream of their confluences with the Rio Hondo River. The agencies collaborated to prepare a cost sharing agreement and are working with the San Gabriel Valley Council of Governments (SGVCOG) for the administration of the design contract on behalf of the agencies. The additional five years will allow the agencies to finalize the design plans and complete construction of the projects.

Request

The partnering agencies listed above have made continual progress in fulfilling their commitments to eliminate dry weather flows to the Rio Hondo tributaries, and have made progress to contract with a consultant to conduct appropriate studies and fieldwork to create plans. However, due to logistical challenges in permitting and potential right-of-way acquisition, the project will not be completed and operational by the required deadline as stated in the submitted LRS to your Board (September 2020).

Deborah Smith, Executive Officer
Los Angeles Regional Water Quality Control Board
December 27, 2018

Therefore, as the largest contributor to the watershed, Pasadena -- on behalf of the County and the cities of Alhambra, Montebello, Monterey Park, Rosemead, San Gabriel, San Marino, South El Monte, South Pasadena, and Temple City -- respectfully requests that the Regional Board consider a five-year time extension (September 2025) to allow the collective Agencies to complete the projects that are currently in design. The additional five-year period will also allow Agencies to investigate grant and funding opportunities to support the development and construction of these projects.

Should you have any questions regarding this request or wish to discuss this further, please contact me at (626) 744-4233 or amaloyan@cityofpasadena.net, or Kris Markarian, City Engineer at (626) 744-4695 or kmarkarian@cityofpasadena.net.

Sincerely,



ARA MALOYAN, P.E.
Director of Public Works

AM/SS

Attachment

cc: Kris Markarian, City of Pasadena
Sean Singletary, City of Pasadena
Paul Alva, Los Angeles County
Mark Lombos, Los Angeles County
Thuan Nguyen, Los Angeles County
David Dolphin, City of Alhambra
Danilo Batson, City of Montebello
Mark McEvoy, City of Monterey Park
Rafael Fajardo, City of Rosemead
Tim D'Zmura, City of San Gabriel
Michael Throne, City of San Marino
Rene Salas, City of South El Monte
Kahono Oei, City of South Pasadena
Michael Forbes, City of Temple City

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MARK PESTRELLA, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

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

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

IN REPLY PLEASE
REFER TO FILE:

WM-11

October 25, 2017

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

Attention Ms. Renee Purdy

Dear Mr. Unger:

**UPPER LOS ANGELES RIVER WATERSHED
SUBMITTAL OF THE RIO HONDO LOAD REDUCTION STRATEGY: ADDENDUM
TO REVISE ACTIONS FOR ALHAMBRA WASH, EATON WASH AND RUBIO WASH**

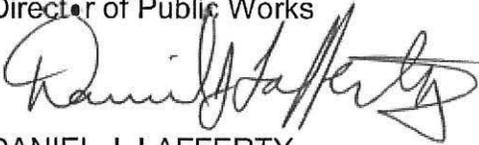
Please find enclosed the Rio Hondo Load Reduction Strategy (LRS): Addendum to Revise Actions for Alhambra Wash, Eaton Wash, and Rubio Wash. The original Rio Hondo LRS report was collaboratively developed by the Upper Los Angeles River Watershed Group, Los Angeles River Upper Reach 2 Subwatershed Group, Lower Los Angeles River Watershed Group, and the Cities of El Monte, Irwindale and was submitted to the Los Angeles Regional Water Quality Control Board on March 22, 2016, to address dry weather bacteria discharges in the Los Angeles River Bacteria Total Maximum Daily Load Resolution No. R10-007. The enclosed Rio Hondo LRS Addendum to Revise Actions for Alhambra Wash, Eaton Wash, and Rubio Wash incorporates comments and feedback received from the Los Angeles Regional Water Quality Control Board staff and features a revised implementation approach based on implementing Regional Dry Weather Projects in combination with enhanced source control programs to address discharges to Rio Hondo from three waterbodies (Alhambra Wash, Rubio Wash, and Eaton Wash).

Mr. Samuel Unger
October 25, 2017
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If you have any questions, please contact me at (626) 458-4300 or dlaff@dpw.lacounty.gov or your staff may contact Mr. Mark Lombos at (626) 458-7143 or mlombos@dpw.lacounty.gov.

Very truly yours,

MARK PESTELLA
Director of Public Works



DANIEL J. LAFFERTY
Assistant Deputy Director
Watershed Management Division

TN:ba

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Enc.

cc: City of Alhambra
City of Monterey Park
City of Pasadena
City of Rosemead
City of San Gabriel
City of San Marino
City of South Pasadena
City of Temple City

Rio Hondo Load Reduction Strategy: Addendum to Revise Implementation Actions for Alhambra Wash, Eaton Wash and Rubio Wash

REVISION TO THE MARCH 2016
RIO HONDO LOAD REDUCTION STRATEGY

SUBMITTED BY:

**Upper Los Angeles River Enhanced Watershed Management
Program Group**

(Unincorporated Los Angeles County, Alhambra, Monterey Park, Pasadena,
Rosemead, San Gabriel, San Marino, South Pasadena, Temple City and the Los
Angeles County Flood Control District)

SEPTEMBER 2017

1 INTRODUCTION

On March 23, 2016, the Upper Los Angeles River Enhanced Watershed Management Program Group¹ (ULAR EWMP Group) submitted a Load Reduction Strategy (LRS) to address dry weather discharges to the Rio Hondo². The Rio Hondo LRS was developed to address requirements of the Los Angeles River Watershed Bacteria Total Maximum Daily Load (Resolution No. R10-007), which incorporates an LRS process as an optional implementation pathway for dry weather discharges. By developing and implementing the optional LRS approach, the participating agencies qualify for a second phase of dry-weather Bacteria TMDL implementation, if needed, as long as [1] Permittees demonstrate sufficient effort and progress under the first-phase LRS and [2] the Regional Board approves the Permittees' request to extend the implementation schedule and compliance coverage under a second-phase LRS. Each LRS developed by the ULAR EWMP Group is incorporated into its EWMP by reference, to provide assurance that receiving water limitations and water quality-based effluent limitations of the MS4 Permit are attained (Order No. R4-2012-0175).

The Rio Hondo LRS presented a list of specific implementation actions for "Priority Outfalls", which were identified through an extensive LRS prioritization process that included outfall monitoring, receiving water monitoring and Monte Carlo modeling. The LRS implementation actions included dry wells, tree wells, infiltration projects (basins, trenches, and galleries), and low flow diversions. The LRS states those actions are subject to adaptive management during the implementation phase. In particular, the LRS states (p. 72)³:

Agencies may elect to implement actions that directly improve receiving water quality. The MS4 Permit encourages restoration activities and the Bacteria TMDL describes an alternative downstream-based LRS approach that relies on "downstream solutions" rather than actions at individual outfalls. If a Group determines that downstream solutions are a preferred alternative, the responsible agencies will coordinate closely with the Regional Board regarding the newly selected alternative(s) and demonstrate its equivalency for attaining the WLA.

This document proposes a revised implementation approach based on implementing Regional Dry Weather Projects in combination with enhanced source control programs to address discharges to Rio Hondo from three of the waterbodies in the Rio Hondo LRS – Alhambra Wash, Rubio Wash and Eaton Wash⁴. **Figure 1** provides an overview map of the Rio Hondo LRS area, participating agencies, LRS results and proposed actions. These actions would address the TMDL WLAs of the Bacteria TMDL⁵ for Rio Hondo and reliably protect the Rio Hondo and the LA River. Details regarding the proposed LRS actions for the three washes are provided in Section 3.

¹ Members of the ULAR EWMP Group that drain to the Rio Hondo watershed are Unincorporated LA County, Alhambra, Montebello, Monterey Park, Pasadena, Rosemead, San Gabriel, San Marino, South El Monte, South Pasadena, and Temple City

² The Rio Hondo LRS was collaboratively developed by the ULAR EWMP Group with other "participating agencies": the LA River Upper Reach 2 Group (members of the Group that drain to the Rio Hondo watershed are Bell Gardens and Commerce), Lower LA River WMP Group (members of the Group that drain to the Rio Hondo watershed are Downey, Pico Rivera and South Gate), City of El Monte and City of Irwindale. For each Group or individual city, the LRS included a unique list of Priority Outfalls, Outlier Outfalls, and proposed implementation actions.

³ The TMDL Staff Report also describes the potential need for a Use Attainability Analysis (UAA) to assure that TMDL targets are achieved upstream of the downstream solutions. At this time, a UAA is not being pursued for the washes.

⁴ The Rio Hondo LRS also includes ULAR EWMP Group actions in Upper Rio Hondo and Lower Rio Hondo. At this time, a revised approach using Regional Dry Weather Projects is not proposed for those waterbodies.

⁵ As described in more detail in Section 2, the Bacteria TMDL established Wasteload Allocations (WLAs) for the mainstem of the Los Angeles River and major tributaries, including the Rio Hondo. Note that third order waterbodies (i.e., tributaries to tributaries) in the Rio Hondo were not identified or addressed explicitly by the TMDL or assigned WLAs.

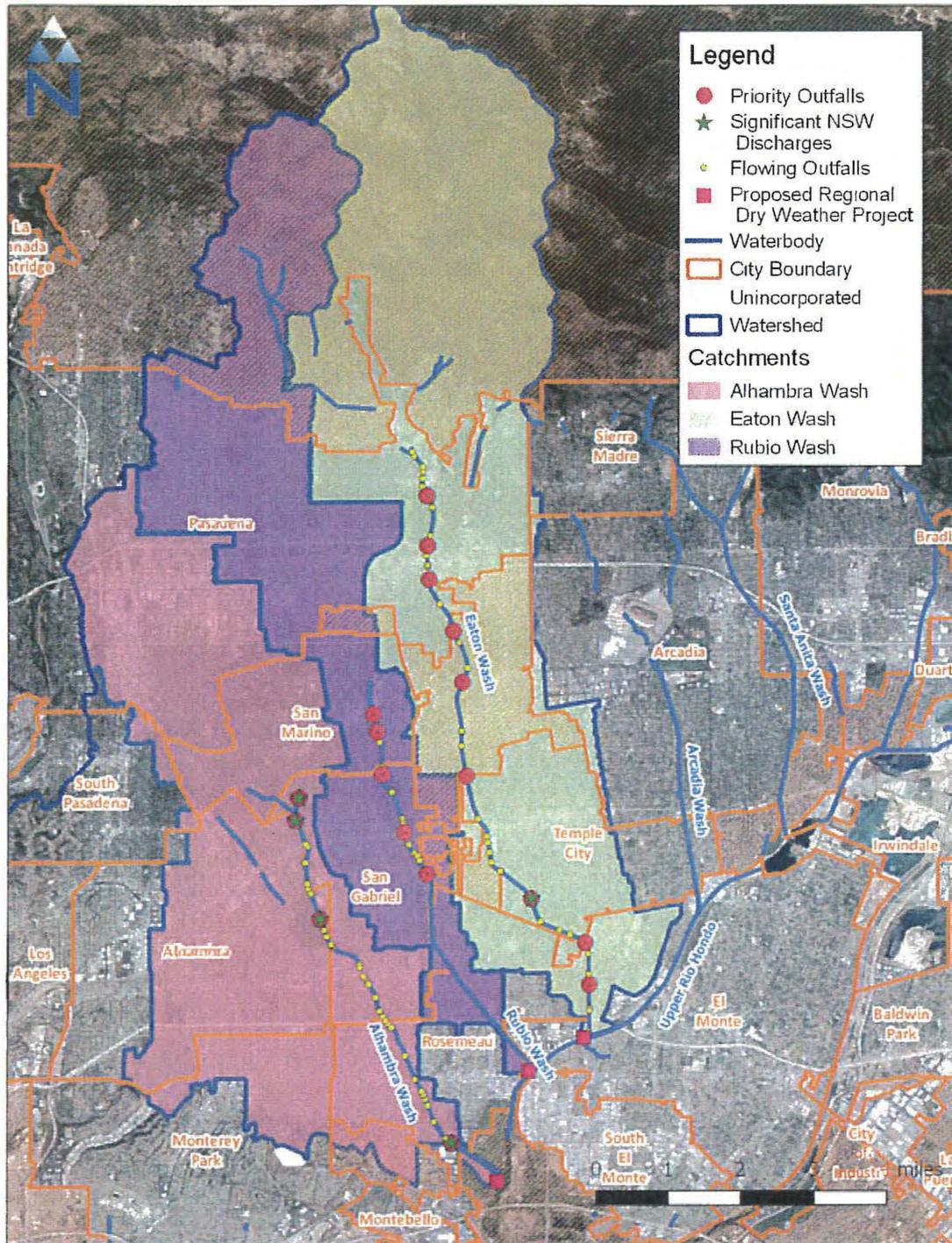


Figure 1. Revised Rio Hondo LRS: Priority Outfalls, Significant Nonstormwater Discharges and Locations of Proposed Regional Dry Weather Projects for Alhambra Wash, Rubio Wash and Eaton Wash

It is important to note that LRS actions will be implemented in combination with other water quality improvement programs under the MS4 Permit, which will further protect the Rio Hondo and its tributaries, as follows:

1. The ULAR EWMP Group’s Coordinated Integrated Monitoring Program (CIMP) and the nonstormwater provisions of the MS4 Permit include source identification and monitoring, as described in Section 3.2. These actions are expected to reduce dry weather discharges into the Rio Hondo tributaries.
2. The ULAR EWMP identifies the location and type of best management practices (BMPs) to be implemented by each jurisdiction by 2037, which includes addressing all Water Quality Priorities including the limiting pollutants zinc and *E. coli*. **Table 1** shows the major EWMP milestones for Rio Hondo watershed. The EWMP includes a large network of wet-weather BMPs that will also address dry-weather runoff via infiltration or capture and treatment. The wet weather BMPs will be implemented over time in accordance with the EWMP milestones between now and 2037. As such, the proposed regional projects and source control programs for Alhambra Wash, Rubio Wash and Eaton Wash could be considered an initial phase of actions (to address dry weather discharges to Rio Hondo by 2020 to meet the Bacteria TMDL requirements and schedule) while the EWMP wet-weather BMPs provide an additional phase of actions to address *both dry and wet weather* discharges into the washes by 2037.

Overall, the proposed approach for the Rio Hondo LRS readily integrates into the ULAR EWMP: implementation of the LRS will result in near-term attainment of dry-weather WLAs for discharges to the Rio Hondo, per the Bacteria TMDL/MS4 Permit, while implementation of the CIMP and EWMP will result in the long-term attainment of RWLs throughout the Rio Hondo watershed including its tributaries.

Table 1. ULAR EWMP Milestone Schedule for Stormwater Capture and BMP Capacity in Rio Hondo Watershed

Schedule Year	Milestone Type	TMDL that is basis of Milestone	Milestone Description
2020	LRS (Dry Weather)	Bacteria TMDL	Complete Implementation of LRS.
2023	LRS (Dry Weather)	Bacteria TMDL	Achieve interim or final WLA and submit report to Regional Board
2024	EWMP (Wet Weather)	Metals TMDL	Capture 357 ac-ft of stormwater runoff during 24-hour RAA critical condition, which corresponds to 369 ac-ft of capacity for LID, green streets and regional projects. ¹
	LRS (Dry Weather)	Bacteria TMDL	Submit new LRS if final WLA not achieved in first LRS phase.
2028	EWMP (Wet Weather)	Metals TMDL	Capture 1065 ac-ft of stormwater runoff during 24-hour RAA critical condition, which corresponds to 901 ac-ft of capacity for LID, green streets and regional projects. ¹
	LRS (Dry Weather)	Bacteria TMDL	Complete implementation of second phase LRS (if necessary).
2037	EWMP (Wet Weather)	Bacteria TMDL	Capture 1219 ac-ft of stormwater runoff during 24-hour RAA critical condition, which corresponds to 1055 ac-ft of capacity for LID, green streets and regional projects. ¹

1 – Listed metrics for the milestone are the sum of the ULAR jurisdiction-specific milestones in Rio Hondo

2 BACKGROUND

This section provides background on the Bacteria TMDL and LRS process (Section 2.1) and the ULAR CIMP (Section 2.2).

2.1 Los Angeles River Watershed Bacteria TMDL

The Bacteria TMDL was adopted by the Los Angeles Regional Water Quality Control Board (Regional Board) in 2010 and the Basin Plan Amendment became effective on March 23, 2012 (Resolution No. R10-007). The requirements of the Bacteria TMDL were incorporated into the MS4 Permit adopted by the Regional Board in December 2012 (Attachment O, Section D). The Bacteria TMDL was developed through a stakeholder process led by the Cleaner Rivers through Stakeholder-led TMDL (CREST) group, which was funded by the City of Los Angeles and included most cities in the watershed, Unincorporated LA County, Los Angeles County Flood Control District (LACFCD) and several environmental non-governmental organizations. One of the innovative elements developed through the CREST process was the LRS approach for dry-weather Bacteria TMDL implementation. CREST developed technical documentation that described the vision for incorporating the LRS process into the TMDL and Permit (see Technical Report Section 7 and its appendices). The LRS was incorporated into the TMDL by the Regional Board. To incentivize the LRS approach, the Bacteria TMDL compliance schedule is extended for agencies who develop and implement an LRS, allowing a second phase of implementation, if needed, for the targeted segment/tributary.

The TMDL Staff Report (p. 57) describes an LRS as both [1] a suite of actions performed by MS4 Permittees along a Los Angeles River segment or tributary and [2] a document submitted to the Regional Board Executive Officer for approval. Three types of actions may be included with an LRS: [1] structural methods directed as specific outfalls, [2] source control or [3] downstream methods that use a single structural control to directly reduce bacteria concentrations in receiving waters. The TMDL Staff Report acknowledges potential challenges with downstream-based approaches but provides the following rationale for its inclusion (p. 58):

The downstream-based method is included because it has the potential to lead to more reliable, faster, and less-expensive solutions for protection of recreational users when compared to a structural approach. Downstream-based approaches may be less expensive and require a shorter timeline because a single (though larger) solution can be installed within or adjacent to the segment/tributary as opposed to multiple projects at upstream outfalls. Downstream-based approaches may be more reliable and protective because they collect and treat all water (including MS4 runoff) at a single location upstream of potential recreational areas.

For Rio Hondo, the LRS submittal and implementation schedule is shown in **Table 2**. If the LRS is elected as a compliance pathway, the MS4 Permit requires completion of the implementation actions within 4.5 years of LRS submittal, by September 2020, to qualify for the extended implementation schedule. Follow-up monitoring through three (3) "snapshots" that measure storm drain flow rate and *E. coli* concentrations will be analyzed by September 2023 to verify the LRS actions result in attainment of the WLA. If the *E. coli* loading from the participating agencies is measured to be *above* the WLA, then a revised "second phase" LRS will be submitted to the Regional Board by September 2024. The participating agencies will have four (4) years to complete the implementation actions described in the revised LRS. The Bacteria TMDL requires the final WLA be demonstrated to be achieved by March 2030.

Table 2. Schedule for Submittal and Implementation for the Rio Hondo LRS

Implementation Action	Responsible Parties	Deadline
Submit a Load Reduction Strategy (LRS) for Rio Hondo	MS4 Permittees discharging to Rio Hondo	March 23, 2016
Approve LRS	Regional Board, Executive Officer	6 months after submittal of the LRS (September 23, 2016)
Complete implementation of LRS for Rio Hondo	MS4 and Caltrans NPDES Permittees discharging to Rio Hondo	September 23, 2020
Achieve interim or (final) WLA and submit report to Regional Board for Rio Hondo, if using LRS	MS4 and Caltrans NPDES Permittees discharging to Rio Hondo, if using LRS	September 23, 2023
Second Phase, If Necessary		
Submit new LRS	MS4 and Caltrans NPDES Permittees discharging to Rio Hondo	September 23, 2024
Complete implementation of LRS	MS4 and Caltrans NPDES Permittees discharging to Rio Hondo, if using LRS	March 23, 2028
Achieve final WLA or demonstrate that non-compliance is only due to upstream contributions and submit report to Regional Board	MS4 and Caltrans NPDES Permittees discharging to Rio Hondo, if using LRS	March 23, 2030

2.2 Upper LA River Coordinated Integrated Monitoring Program

The CIMP for the ULAR EWMP Group was approved by the Regional Board with conditions on August 5, 2015. The CIMP includes a Nonstormwater Outfall Program to address Part II.E.3 of the Monitoring and Reporting Program of the MS4 Permit. The NSW Outfall Program is focused on NSW discharges to receiving waters from major outfalls (i.e., discharges occurring during dry weather). The intent of the NSW Outfall Program is to demonstrate that the Permittees are effectively prohibiting NSW discharges that are not exempt or conditionally exempt discharges to receiving waters and to assess whether NSW discharges are causing or contributing to exceedances of RWLs. By detecting, identifying, and eliminating illicit discharges, the NSW Outfall Program will demonstrate Permittees' efforts to effectively prohibit NSW discharges to and from the MS4. Where NSW discharges are deemed "significant", the program will discern whether they are illicit, exempt, or conditionally exempt, and demonstrate whether the discharges may be causing or contributing to exceedances of receiving water limitations (RWLs).

The ULAR NSW Outfall Program was designed to integrate into the LRS process of the Bacteria TMDL, including the following:

- ▼ *E. coli* is used as the water quality priority for determining the significance of a NSW discharge
- ▼ The screening methodology is consistent with the LRS "snapshot" monitoring including the number and timing of snapshot events and the measured parameters.

- ▼ The schedule for screenings and source investigations are phased and aligned with the Bacteria TMDL implementation schedule
- ▼ Identification of “Significant NSW Discharges” is based on the outcome of the quantitative LRS analysis – namely, the list of Priority Outfalls and Outlier Outfalls from the LRS.

As described in the next section, the Nonstormwater Outfall Program complements the proposed revised LRS approach to address bacteria discharges from the ULAR EWMP Group.

3 REVISED LRS IMPLEMENTATION STRATEGY

This section provides an overview of the revised LRS implementation strategy for Alhambra Wash, Rubio Wash and Eaton Wash. The LRS submitted in March 2016 included a total of 18 structural actions for the Priority Outfalls in Alhambra Wash (four Priority Outfalls), Rubio Wash (five Priority Outfalls) and Eaton Wash (nine Priority Outfalls) (see **Figure 1**). As described below, the revised strategy is based on a two-tiered approach, where the first tier is Regional Dry Weather Projects and the second tier is enhanced minimum control measures (MCMs) to reduce dry weather flows and/or bacteria loading into the washes. As described below in Section 3.1, a total of three Regional Dry Weather Projects are proposed – one each at the mouth of Alhambra Wash, Rubio Wash and Eaton Wash (see **Figure 1**). As described below in Section 3.2, each jurisdiction that drains to the three washes has identified enhanced MCMs to reduce bacteria loading during dry weather. Together, these two tiers of actions replace the 18 structural actions previously proposed for Alhambra Wash, Rubio Wash and Eaton Wash. For the Outlier Outfalls, source investigations will be performed.

It is important to note the CIMP being implemented by the ULAR EWMP Group is closely tied to the findings of each LRS in the LA River watershed. While not an explicit component of the LRS actions, the program to address nonstormwater discharges through the ULAR CIMP will provide additional water quality improvement benefits for Rio Hondo waterbodies. As described in Section 3.3, based on a CIMP analysis that defined Significant NSW Discharges, the nonstormwater program of the MS4 Permit focused on the LRS Priority Outfalls that discharge 90% of the cumulative *E. coli* load from Priority Outfalls within the Rio Hondo portion of the ULAR EWMP area.

Overall, as shown in **Table 3**, water quality in the three Rio Hondo washes will be improved through a comprehensive and integrated set of LRS and MS4 Permit actions. Additional details are provided in the following subsections.

Table 3. Summary of LRS and MS4 Permit Actions to Address Alhambra Wash, Rubio Wash and Eaton Wash

Receiving Water	Priority Outfalls and Outlier Outfalls ()	LRS Actions to be Implemented by Sept 23, 2020 to Meet TMDL Requirements				Additional MS4 Permit Actions to Meet MS4 Permit/EWMP Requirements		
		Regional Dry Weather Projects	Outfall Actions	Source ID	Enhanced MCMs (source control)	NSW Program Actions (Significant Outfalls)	Baseline MCMs (including ICID)	EWMP Wet Weather BMPs
Alhambra Wash	AlbWsh-179				•	•	•	•
	AlbWsh-213	•			•	•	•	•
	AlbWsh-RW-Up4				•	•	•	•
	AlbWsh-03				•	•	•	•
	AlbWsh-143			•			•	•
	AlbWsh-133			•			•	•
Rubio Wash	RubWsh-Up				•		•	•
	RubWsh-86				•		•	•
	RubWsh-91	•			•		•	•
	RubWsh-33				•		•	•
	RubWsh-01				•		•	•
	RubWsh-18			•			•	•
	RubWsh-66			•			•	•
	RubWsh-55			•			•	•
Eaton Wash	EtnWsh-132				•	•	•	•
	EtnWsh-131				•		•	•
	EtnWsh-203				•		•	•
	EtnWsh-162				•		•	•
	EtnWsh-166	•			•		•	•
	EtnWsh-175				•		•	•
	EtnWsh-206				•		•	•
	EtnWsh-155				•		•	•
	EtnWsh-103				•		•	•
	EtnWsh-23			•			•	•
EtnWsh-193			•			•	•	

3.1 Tier 1: Regional Dry Weather Projects

The proposed alternative LRS approach would construct three large dry weather facilities, called Regional Dry Weather Projects – one each at the mouth of Alhambra Wash, Rubio Wash and Eaton Wash – rather than 18 smaller structural actions at the Priority Outfalls. This approach is a preferred alternative for the following reasons:

- ▼ Addressing discharges from the tributaries to the Rio Hondo will result in attainment of the TMDL requirements in a manner that would maximize the water resources benefit of LRS implementation by capturing all dry weather flows in each Wash rather than only the flows from Priority Outfalls
- ▼ Addressing discharges from the tributaries to the Rio Hondo would increase the level of protection to downstream waterbodies on the TMDL schedule by addressing all the *E. coli* loads from each Wash rather than only the loads from Priority Outfalls.
- ▼ Implementing three rather than 18 projects would consolidate the construction activity within each Wash and allow for a more streamlined implementation schedule.
- ▼ Utilization of the approach will ensure attainment of Bacteria TMDL WLAs, while allowing EWMP projects to support attainment of RWLs throughout the washes in line with the wet-weather TMDL schedule.

The Rio Hondo LRS presented fact sheets for five types of control measures at Priority Outfalls (see Section 7.3.1). The concepts for Regional Dry Weather Projects focus on offline infiltration basins and low flow diversions⁶, as follows.

- ▼ **Infiltration basins:** these actions would capture and infiltrate all flow from the Wash, thereby 100% eliminating discharge of dry weather flows. Infiltration basins are offline facilities that require open space areas of sufficient size in close proximity to the channel. These may include open publicly owned right-of-way areas, vacant lots, schools, parks, etc. A pump station would be required to divert flows from the channel to the infiltration basin site.
- ▼ **Low flow diversions:** these actions would divert all flow from the Wash to a nearby sanitary sewer, thereby 100% eliminating discharge of dry weather flows. Diverted flows are combined with the wastewater stream, and are treated by a wastewater treatment facility before being discharged to surface waters or groundwater. LFDs often incorporate a pumping/lift station needed to divert dry weather flows to the sanitary sewer system. Implementation of LFDs is not dependent on soil or groundwater conditions, but sites must be near adequately sized sanitary sewer mains that have sufficient capacity to convey dry weather flows.

The following subsections describe evaluated concepts for Regional Dry Weather Projects for each Wash. In some cases, more than one concept is presented to address potential site constraints.

3.1.1 Alhambra Wash

The primary concept for Alhambra Wash is a low flow diversion. Soils near the lower portion of Alhambra Wash are classified as HSG C with low infiltration rates. Infiltration basins are therefore not feasible alternatives for this site. However, there is opportunity for LFD as shown in **Figure 2**.

⁶ While offline infiltration basins and low flow diversions are the focus of the proposed alternative, other types of regional projects may also be considered for implementation during design development. This may include treating dry weather flows using engineered wetlands or ultraviolet light and/or using dry weather flows as an irrigation source to offset public and private potable water demands

There appears to be adequate space for a diversion point/pump intake well in Alhambra Wash just downstream of Rush St. and Priority Outfall AlbWsh-03. Dry weather flows could be collected at this point and conveyed to a pump station located on Rice Elementary School property. These flows could then be discharged to an existing sanitary sewer manhole located on the same property, and subsequently conveyed in a 27-inch gravity main to the Whittier Narrows Water Reclamation Plant. The recommended design dry weather flow rate for pump sizing is 1,000 gpm.

A thorough analysis would be needed to determine sanitary sewer flow rates and capacity before LFD can be considered a feasible option at the Alhambra Wash site. It is possible that the existing sanitary sewer system does not have sufficient capacity to convey an additional 1,000 gpm. It is also possible that the Whittier Narrows Water Reclamation Plant will not accept the dry weather flows for treatment. In either case, LFD would not be a feasible Regional Dry Weather Project for Alhambra Wash. Since infiltration is not an option at this site, the other plausible solution would involve treatment to remove bacteria from dry weather flows. This may consist of an engineered wetland system in the Whittier Narrows Golf Course, treatment using ultraviolet light, or using dry weather flows as an irrigation source for the Whittier Narrows Golf Course.

3.1.2 Rubio Wash

The primary concept for Rubio Wash is an infiltration basin. Soils near the lower portion of Rubio Wash are classified as HSG A which indicates adequate infiltration rates exist for infiltration near this site. A vacant lot located between Rubio Wash and Rosemead Blvd. as shown in **Figure 3**, may provide one potential location for an infiltration basin. A pump station and piping would be needed to convey the dry weather flows from the Rubio Wash to the infiltration basin. Provisions to return any basin overflows to the channel would also be required. The recommended design dry weather flow rate for pump sizing is 800 gpm, and the required infiltration basin footprint is 0.7 acres.

There is also opportunity for LFD as shown in **Figure 4**. There appears to be adequate space for a diversion point/pump intake well adjacent to the vacant lot located between Rubio Wash and Rosemead Blvd. Dry weather flows could be collected at this point and conveyed to a pump station located on the vacant lot. These flows could then be discharged to an existing sanitary sewer manhole located on the same property, and subsequently conveyed in a 57-inch gravity main to the Whittier Narrows Water Reclamation Plant. The recommended design dry weather flow rate for pump sizing is 800 gpm.

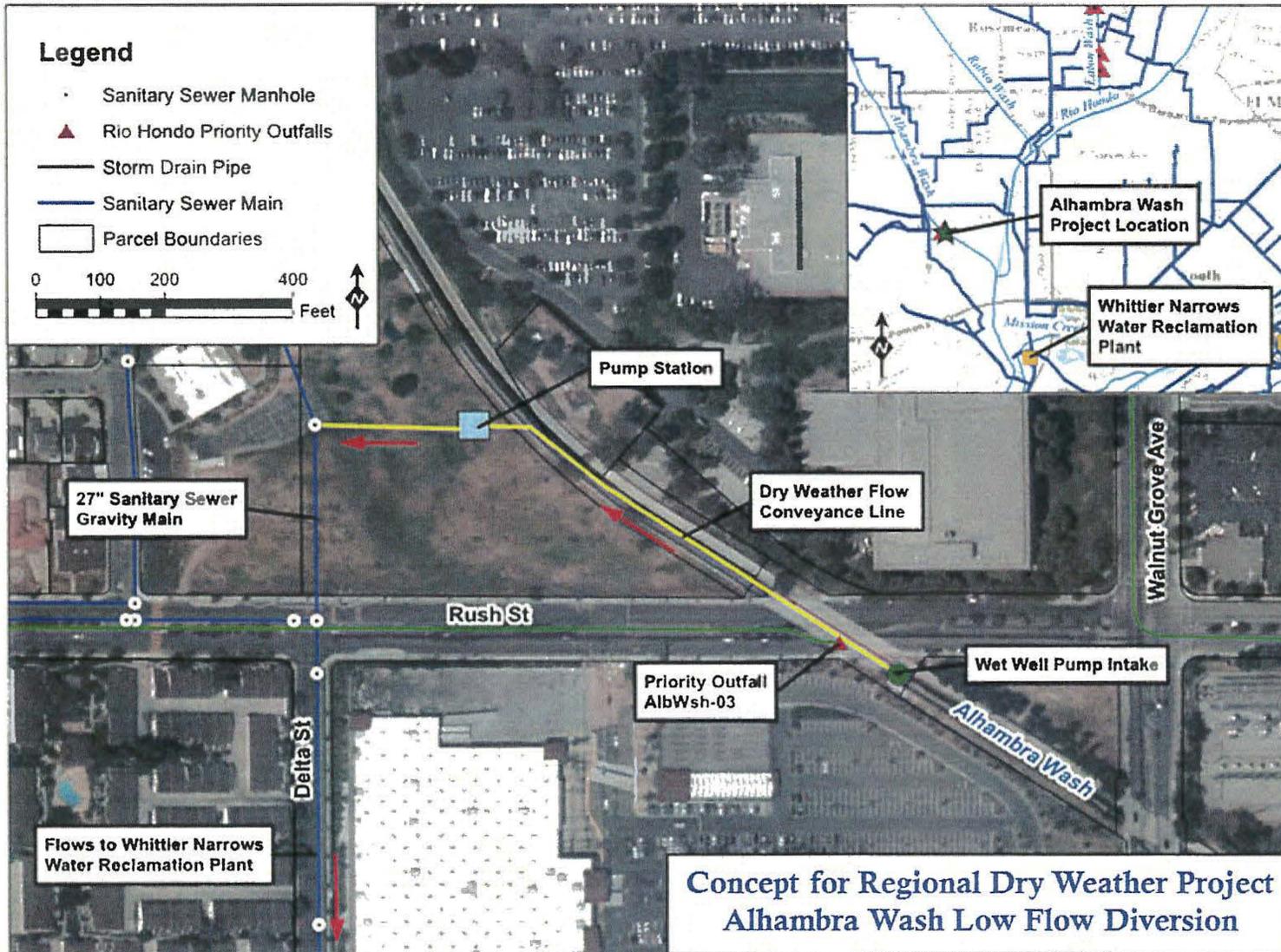
3.1.3 Eaton Wash

The primary concept for Eaton Wash is an LFD as shown in **Figure 5**. There appears to be adequate space for a diversion point/pump intake well in Eaton Wash just upstream of Interstate 10. Dry weather flows could be collected at this point and conveyed to a pump station located adjacent to the channel. These flows could then be discharged to an existing sanitary sewer manhole located near Interstate 10, and subsequently conveyed in a 24-inch gravity main to the Whittier Narrows Water Reclamation Plant. The recommended design dry weather flow rate for pump sizing is 630 gpm.

Soils near the lower portion of Eaton Wash are classified as HSG A which indicates adequate infiltration rates for an infiltration basin at this site. However, the required open space necessary for an infiltration basin was not identified in this location. In the event a site for an infiltration basin is identified in the future, the required footprint for the infiltration basin would be 1.4 acres.

3.1.4 Summary

The concepts presented for Regional Dry Weather Projects demonstrate that dry weather facilities are feasible for capturing or treating the flows in each of the three washes, providing a more sustainable, protective and efficient approach for LRS implementation. The second tier of LRS implementation, described in the next section, would provide assurance that nonstormwater discharges would also be addressed.



Data Source: Esri Basemaps, LA County GIS Data Portal, USGS National Hydrography Dataset

Figure 2 Alhambra Wash: Low Flow Diversion Conceptual Layout

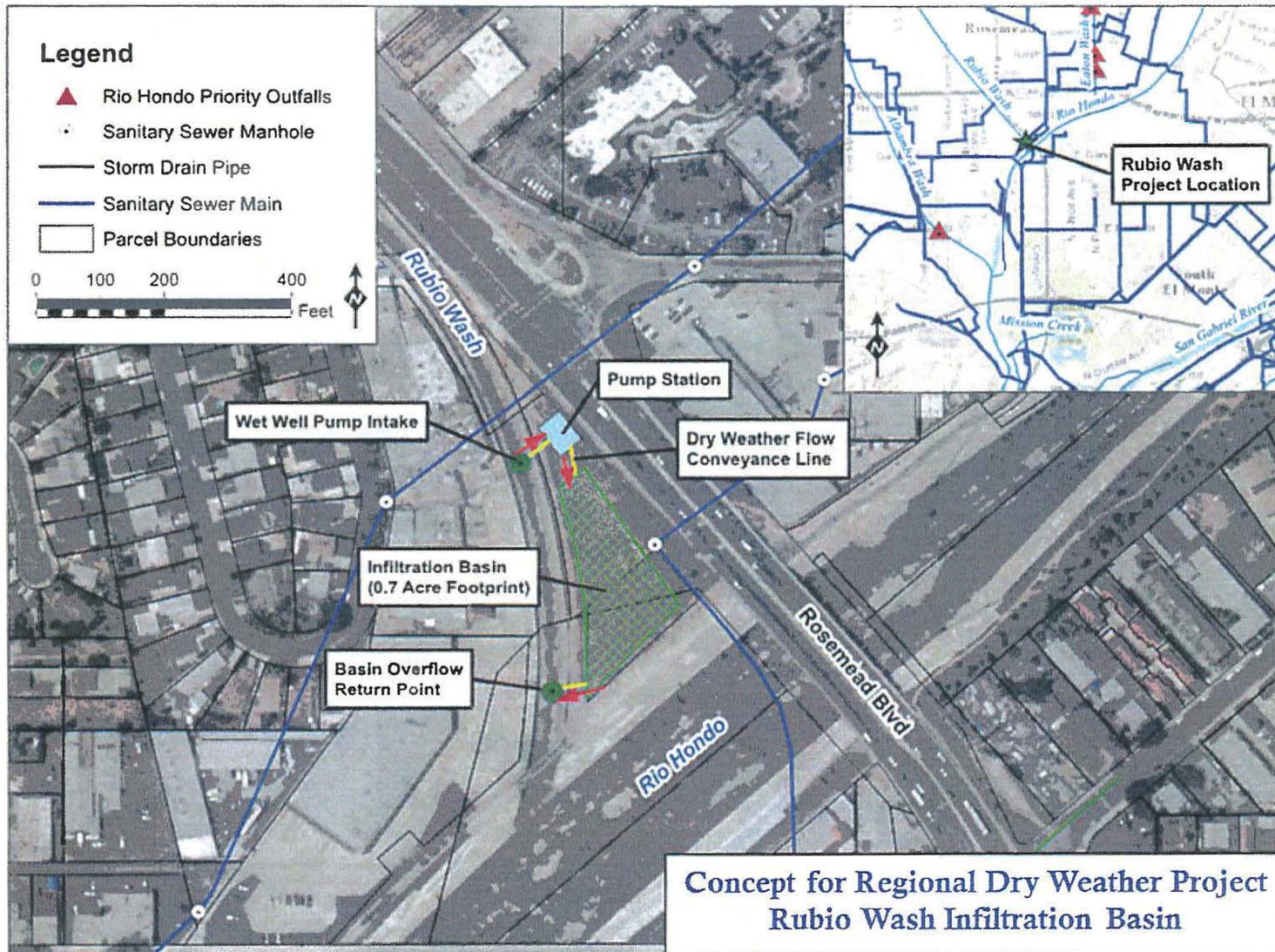


Figure 3. Rubio Wash Regional Dry Weather Project: Infiltration Basin Conceptual Layout

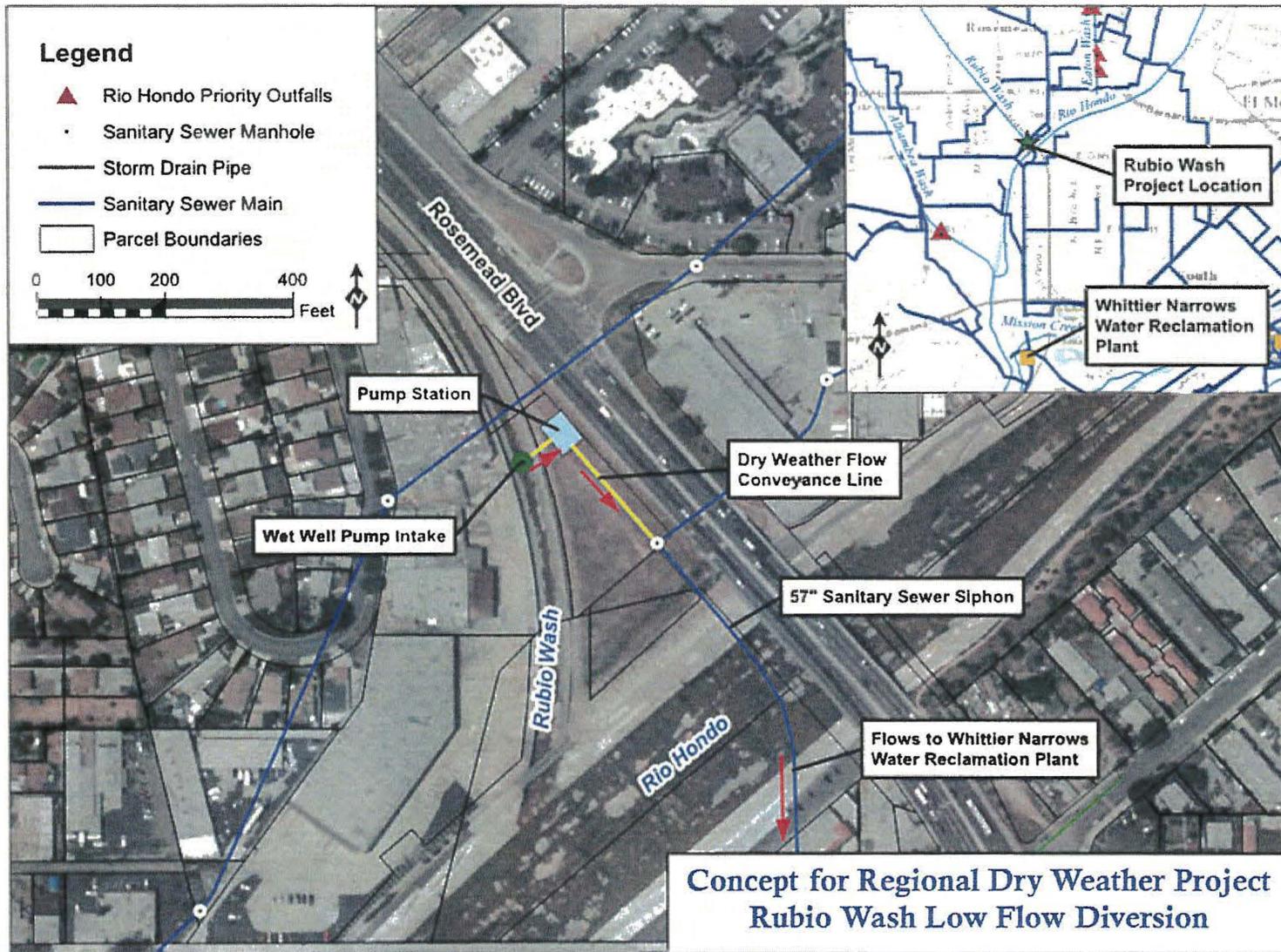


Figure 4. Rubio Wash Regional Dry Weather Project: Low Flow Diversion Conceptual Layout

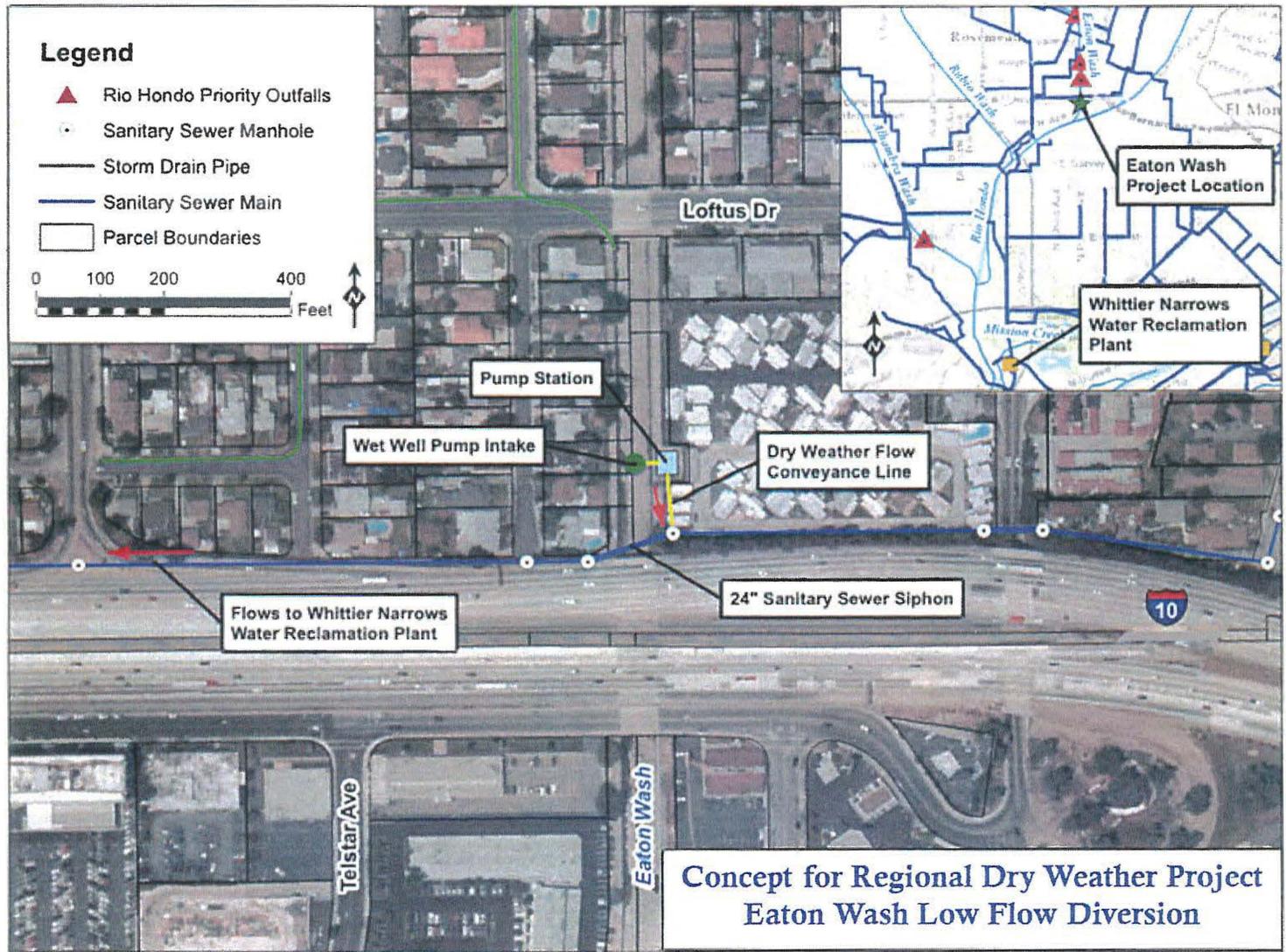


Figure 5. Eaton Wash Regional Dry Weather Project: Low Flow Diversion Conceptual Layout

3.2 Tier 2: Enhanced Minimum Control Measures

Each ULAR EWMP Group member that drains to Alhambra Wash, Eaton Wash or Rubio Wash has identified enhanced MCMs to further reduce bacteria loading during dry weather. As shown in **Table 4**, the enhanced MCMs to be implemented span a range of MCM categories that will reduce dry weather flows or bacteria discharged from the watershed. By 2020, the ULAR EWMP Group will demonstrate these enhanced MCMs have been implemented as described.

Table 4. Enhanced MCMs to be Implemented as 2nd Tier of LRS Actions

Agency	Category	Enhanced MCM to be Implemented within Priority Outfall drainages by 2020
Alhambra	Public Agency Activities	Implement the "Gateway Alhambra" mobile phone app to enable residents to submit requests to investigate overwatering or illicit discharges.
Unincorporated County	Public Agency Activities	Implement the "The Works" mobile phone app to enable residents to support conservation efforts by reporting water wasting.
Monterey Park	Industrial/ Commercial Facilities	Distribute BMP brochures specific to restaurants and auto maintenance, as well as general businesses
	Public Agency Activities	Implement an enhanced street sweeping schedule: Commercial streets four nights a week, and alleys, parking lots, and schools weekly. Residential zones and medians are also swept weekly.
	Public Agency Activities	Implement a regular practice of diverting runoff to landscaped areas when feasible as part of regular street/road/paved surface maintenance work.
Pasadena	Public Agency Activities	Implement a "citizen service center" smart phone application that allows citizens to report wasting of water, including overwatering.
	Industrial/ Commercial Facilities	Distribute BMP brochures specific to restaurants and auto maintenance, as well as general businesses
	Public Agency Activities	Our "Clean Team" will sweep streets, pick up litter, and clean sidewalks daily in Old Town Pasadena District (which drains to Rio Hondo).
	Public Agency Activities	Utilize a portable, truck-mounted water treatment plant which can remove water from the distribution system, treat it, and return the water to the distribution system.
	Public Education	Broadcast City public service announcements that focus on the reduction of over-watering. City has webpage devoted to water conservation (http://www.cityofpasadena.net/waterandpower/SaveWater), which includes education on overwatering, links to rebates/incentives, a link to an online Water School for City residents (https://www.onlinewaterschool.com/pasadena) that provides a certificate, a link to a webpage devoted to creating drought tolerant landscapes (http://www.cityofpasadena.net/waterandpower/landscapes), a link to a webpage devoted to the benefits of mulch, which reduces the need for watering, and places and times to receive mulch from the Public Works Department (http://www.cityofpasadena.net/PublicWorks/MulchRecycling), a link to a list of workshops held by Pasadena Water and Power for residents on drought tolerant landscaping and rain barrels (http://www.cityofpasadena.net/waterandpower/workshops), a link to water conservation videos created by the City, which includes outdoor watering tips (https://www.youtube.com/user/PasadenaWaterPower/videos), a link to information on the City's Water Waste Ordinance and related prohibitions and enforcement actions, as well as a link to the codified ordinance (http://www.cityofpasadena.net/waterandpower/waterwaste/), and a link and a phone number to report

		anonymously report water wasters through the City's Citizen Service Center (http://ww5.cityofpasadena.net/citizen-service-center).
	Public Agency Activities	City owned parking lots will be cleaned 1 – 5 times per week (depending on frequency needed).
	Public Agency Activities	A combination of regenerative air sweepers and mechanical sweepers will be employed to address all types of debris that collect in the city's curb sides.
Rosemead	Public Information and Participation	Distribute educational material for distribution to the public explaining who may and who may not conduct a non-profit car wash and the recommended BMPs to use for them.
San Gabriel	Industrial/ Commercial Facilities	Distribute BMP brochure specific to restaurants, auto maintenance, and general businesses.
San Marino	Public Agency Activities	Install additional pet waste stations at parks and sports fields in the city (One of the outfalls of concern is directly adjacent to a large sports field where many residents walk their dogs)
South Pasadena	Public Education	Distribute overwatering outreach material http://www.ci.south-pasadena.ca.us/modules/showdocument.aspx?documentid=7741
	Industrial/ Commercial Facilities	Developed BMP brochures specific to restaurants and auto maintenance, as well as general businesses
	Public Education	City webpages on water conservation, which encourages reduction of overwatering: http://www.southpasadenaca.gov/index.aspx?page=366 and http://www.ci.south-pasadena.ca.us/index.aspx?page=406
	Public Education	City regularly holds water wise landscape workshops for local residents
	Public Education	Developed overwatering outreach material http://www.ci.south-pasadena.ca.us/modules/showdocument.aspx?documentid=7741
Temple City	Industrial/ Commercial Facilities	Developed BMP brochures specific to restaurants and auto maintenance, as well as general businesses
	Public Agency Activities	Enhanced street sweeping: Weekly, with main commercial districts (Las Tunas Drive and Temple City Boulevard) swept three times a week.
	Public Agency Activities	Cleaning of all city-owned catch basins on a priority A and priority B basis by the County
	Public Agency Activities	Established a set of guidelines for people re-landscaping their front lawns. The guidelines support the conversion of grass lawns to drought tolerant landscaping and the provision of onsite water retention.
	Public Agency Activities	Planted a water wise, drought tolerant display garden at City Hall to promote better water management.
	Planning and Land Development	Adopted small-site LID ordinance
	Illicit Connection/ Illicit Discharges	Provide special training for code enforcement staff in stormwater ordinance enforcement
	Public Agency Activities	Established a set of guidelines for people re-landscaping their front lawns. The guidelines support the conversion of grass lawns to drought tolerant landscaping and the provision of onsite water retention.

3.3 Additional Actions under MS4 Permit: CIMP Non-Stormwater Program

While the ULAR CIMP is implemented outside of the LRS implementation framework, the CIMP activities under the NSW Outfall Program are closely tied to the findings of each LRS in the LA River watershed. Continuing implementation of the NSW Outfall Program in the ULAR CIMP will provide assurance that the ULAR EWMP Group is effectively prohibiting NSW discharges, and would provide another tier of receiving water protection for the LRS. The data analysis for the Rio Hondo NSW Outfall Program was conducted with a goal to focus efforts on most problematic discharges

within the Rio Hondo watershed. This section provides an overview of the results of the analysis conducted to date, and the planned actions for Significant NSW Discharges, which are also integrated into LRS implementation.

The NSW Outfall Program is a process which consists of the following six elements, described in the subsections below:

1. Outfall Screening
2. Identification of outfalls with significant NSW discharge
3. Inventory of outfalls with significant NSW discharge
4. Prioritized source investigation
5. Identify sources of significant NSW discharge
6. Monitoring Significant NSW Discharges exceeding criteria

3.3.1 Outfall Screening

To initiate the NSW Outfall Program, outfall screening was conducted in Upper and Lower Rio Hondo and its tributaries (Alhambra Wash, Arcadia Wash, Eaton Wash, Rubio Wash, Sawpit Wash and Santa Anita Wash) between September 2014 and October 2015. The six “snapshot” outfall monitoring events (*E. coli* and flow measurements) used to develop the LRS were used as the basis for the NSW outfall screening.

3.3.2 Identification of Outfalls with Significant NSW Discharges

E. coli and flow data collected during the outfall screening events were used to identify outfalls with Significant NSW Discharges by using the approach described in the ULAR CIMP, as outlined in **Table 5** (Table 17 in the ULAR CIMP).

To determine which of the Priority Outfalls would also be selected as outfalls with Significant NSW Discharges, the median predicted *E. coli* loading rates generated by the Monte Carlo simulation were utilized to rank the outfalls from highest to lowest. The median predicted loading rates were used to calculate the contribution of each outfall to the total loading from all Priority Outfalls and the total loading from all outfalls (i.e., priority, outlier, and all other outfalls) was calculated (**Table 6**). These calculations are based on the total across all of Rio Hondo watershed (including Upper and Lower Rio Hondo). The top seven outfalls in terms of total loading were identified as outfalls with Significant NSW Discharges. These seven outfalls contribute 92% of the total loading from all Priority Outfalls and 83% of all outfalls when using the median predicted loadings. The remaining outfalls contribute 1% or less each. Note that two of the outfalls are outside of the area where the alternative LRS is being proposed (they are in Lower Rio Hondo).

Table 5. Approach for Determining Outfalls with Significant Non-Stormwater Discharges

Component	Description
Characteristics for Defining Significant NSW Discharges	<p>Outfalls will be determined to be Significant NSW Discharges based on the Load Reduction Strategy (LRS) approach outlined in the LA River Bacteria TMDL. The approach considers the first two aspects of the discharge described immediately below and the determination of Significant NSW Discharges is described as the criteria in bold:</p> <ul style="list-style-type: none"> • Does the NSW discharge reach the receiving water during dry weather? • Is the <i>E. coli</i> concentration in the NSW discharge above receiving water limits? <p><i>E. coli</i> loading rate: the identification of outfalls with significant NSW discharge is based on conducting a quantitative analysis (i.e., Monte Carlo modeling) to: (1) evaluate both the individual and cumulative <i>E. coli</i> loading rates from outfalls along a LA River segment or tributary before and after implementation actions, and (2) prioritize implementation actions based on these <i>E. coli</i> loading rates. The LRS process described by the TMDL, which will be used for the NSW Program, is based around identification of two categories of outfalls, as follows:</p> <ul style="list-style-type: none"> • Priority Outfalls: The LRS prioritization process highlights the Priority Outfalls because they have the highest loading rates of <i>E. coli</i>. Overall, Priority Outfalls have relatively consistent, problematic discharges that both drive storm drain loading rates above the WLA. As such, Priority Outfalls are the highest priority for specific implementation actions in the LRS. • Outlier Outfalls: are outfalls identified by retrospectively comparing the results of the Monte Carlo simulations to the "raw" monitoring data.

Table 6. Priority Outfall Loading Rates and Identification of Outfalls with Significant NSW Discharges

Priority Outfalls Identified in LRS	Rank ¹	Loading Rate ¹ (10 ⁹ MPN/day)	Cumulative % of Priority Outfall Loading	Cumulative % of All Outfall Loading	Incremental Increase in Percent of Priority Outfall Loading	Significant NSW Discharge?
RH-078	1	16.2	41%	36%	41%	Yes
AlbWsh-179	2	5.92	56%	50%	15%	Yes
EtnWsh-132	3	5.44	69%	62%	14%	Yes
AlbWsh-213	4	3.49	78%	70%	9%	Yes
AlbWsh-RW-Up4	5	2.22	84%	75%	6%	Yes
RH-090	6	1.81	88%	79%	5%	Yes
AlbWsh-03	7	1.62	92%	83%	4%	Yes
RubWsh-Up	8	0.506	93%	84%	1%	No
EtnWsh-131	9	0.484	95%	85%	1%	No
EtnWsh-203	10	0.467	96%	86%	1%	No
RH-092	11	0.379	97%	87%	1%	No
EtnWsh-162	12	0.350	98%	87.6%	0.9%	No
RH-095	13	0.338	98.6%	88.3%	0.8%	No
RH-072	14	0.245	99.2%	88.9%	0.6%	No
RH-093	15	0.066	99.3%	89.0%	0.16%	No
EtnWsh-175	16	0.059	99.5%	89.2%	0.15%	No
EtnWsh-166	17	0.057	99.6%	89.3%	0.14%	No
EtnWsh-206	18	0.039	99.7%	89.4%	0.10%	No
EtnWsh-155	19	0.030	99.8%	89.5%	0.08%	No
RubWsh-33	20	0.018	99.9%	89.5%	0.05%	No
RubWsh-86	21	0.018	99.9%	89.5%	0.05%	No
EtnWsh-103	22	0.017	99.9%	89.6%	0.04%	No
RubWsh-01	23	0.012	100%	89.6%	0.03%	No
RubWsh-91	24	0.012	100%	89.6%	0.03%	No

1 – The rank and loading ranks are based on the best estimate of loading generated by the Monte Carlo simulations completed for the Rio Hondo Load Reduction Strategy.

3.3.3 Inventory of Outfalls with Significant NSW Discharges

The outfalls with Significant NSW Discharges determined through the process described above are summarized in **Table 7**. Also, see **Figure 1**.

Table 7. Outfalls with Significant NSW Discharges in the Rio Hondo Subwatershed

Site ID	Water Body	Jurisdictions within the Outfall Drainage Area ¹	Jurisdiction in which Outfall is Located
RH-078	Rio Hondo	Montebello	Montebello
AlbWsh-179	Alhambra Wash	Alhambra, San Marino, South Pasadena, Pasadena	Alhambra
EtnWsh-132	Eaton Wash	Temple City, Unincorporated Los Angeles County, Pasadena, <i>Arcadia, Sierra Madre</i>	Temple City
AlbWsh-213	Alhambra Wash	San Gabriel, Alhambra, San Marino, Pasadena	Alhambra
AlbWsh-RW-Up4	Alhambra Wash	San Gabriel, San Marino, Pasadena	San Gabriel
RH-090	Rio Hondo	Montebello	Montebello
AlbWsh-03	Alhambra Wash	Rosemead, Unincorporated Los Angeles County, Monterey Park	Rosemead

Italicized underlined text indicates jurisdictions which are outside of the Upper Los Angeles River (ULAR) EWMP Group Boundaries.

3.3.4 Prioritized Source Investigation

Source investigations were prioritized for the outfalls identified in **Table 7**. The source investigations for all seven outfalls with significant NSW discharge were conducted in August 2016, per the schedule in **Table 8**.

Table 8. Schedule for Conducting Source Investigations of Outfalls with Significant NSW Discharges

Site ID	Date of Source Investigation Event
RH-078	August 17, 2016
AlbWsh-179	August 18, 2016
EtnWsh-132	August 19, 2016
AlbWsh-213	August 22, 2016
AlbWsh-RW-Up4	August 23, 2016
RH-090	August 16, 2016
AlbWsh-03	August 15, 2016

The outfall and upstream sites along the storm drain system in the drainage area were screened as part of the source investigation events by collecting *E. coli* and flow data. The upstream sites were selected based on a variety of factors including feasible access points; isolating specific drainage areas, major inputs or land uses; and observations made by the field crew. The results of the source investigation efforts are discussed in the section below.

3.3.5 Identify Sources of Significant NSW Discharges

Part IX.A.2 of the MRP requires Permittees to classify the source investigation results into one of four endpoints outlined as follows:

- A. Illicit connections or illicit discharges
- B. Authorized or conditionally exempt NSW discharges
- C. Natural flows
- D. Unknown sources

The information collected during the source investigation events do not support classifying any of the Significant NSW Discharges as an illicit connection or illicit discharge, an authorized or conditionally exempt NSW discharge, or natural flows. As such, the sources of the Significant NSW Discharges are currently unknown.

3.3.6 Monitoring Significant NSW Discharges Exceeding Criteria

The MRP outlines requirements for monitoring at outfalls with Significant NSW Discharges from either unknown or conditionally exempt NSW discharges. The CIMP states that three monitoring events will be conducted to meet the MRP requirements at the subset of outfalls determined to be Significant NSW Discharges. The dates of these monitoring events are presented in **Table 9**. Note that as the required LRS bacteria monitoring was completed, the three events identified in **Table 9** were conducted to evaluate discharges of other water quality priorities. Post-LRS outfall and receiving water monitoring, expected to be initiated in 2020 after completion of LRS projects, will be conducted to evaluate the effectiveness of non-structural and structural approaches outlined in the LRS.

Table 9. Dates of Monitoring Events for Rio Hondo Significant NSW Discharges

Event No.	Date
1	04/27/2016
2	05/31/2016
3	04/05/2017

3.3.7 Summary

The NSW Outfall Program has identified Significant NSW Discharges in the Rio Hondo Watershed, and those outfalls are now being addressed through the nonstormwater prohibition provisions of the MS4 Permit. Those provisions provide assurance that problematic discharges upstream of the Regional Dry Weather Projects will be addressed.

4 CONCLUSIONS

The revised LRS strategy for Alhambra Wash, Eaton Wash and Rubio Wash is a comprehensive approach to meet the requirements of the Bacteria TMDL and reduce loading from these washes to Rio Hondo. Over the longer term, the revised LRS strategy in combination with MS4 Permit actions, including implementation of the ULAR EWMP, will also result in attainment of receiving water limitations within the washes. The concepts presented for the first tier of LRS actions, Regional Dry Weather Projects, demonstrate that dry weather facilities are feasible for capturing or treating the flows in each of the three washes, providing a more sustainable, protective and efficient approach for LRS implementation. The second tier of LRS actions to be implemented by ULAR Group members that drain to one of the washes, enhanced MCMs, span a range of MCM categories and will reduce dry weather flows or bacteria discharged from the watershed. While the ULAR CIMP is implemented outside of the LRS implementation framework, the CIMP activities under the NSW Outfall Program are closely tied to the findings of each LRS in the LA River watershed. The ULAR CIMP identified seven Significant Nonstormwater Discharges and those discharges, which are upstream of the Regional Dry Weather Projects, will be addressed through the nonstormwater provisions of the MS4 Permit. Water quality in the three Rio Hondo washes will be improved through this comprehensive and integrated set of LRS and MS4 Permit actions, and the ULAR EWMP Group looks forward to coordinating with Regional Board staff as implementation activities progress.