2nd Watershed Permit (R2-2019-0017): Regional Evaluation of Potential Nutrient Discharge Reduction by Water Recycling

BACWA Annual Meeting
Scottish Rite Center, Oakland, CA
January 10, 2020

Mike Falk (Mike.Falk@hdrinc.com)

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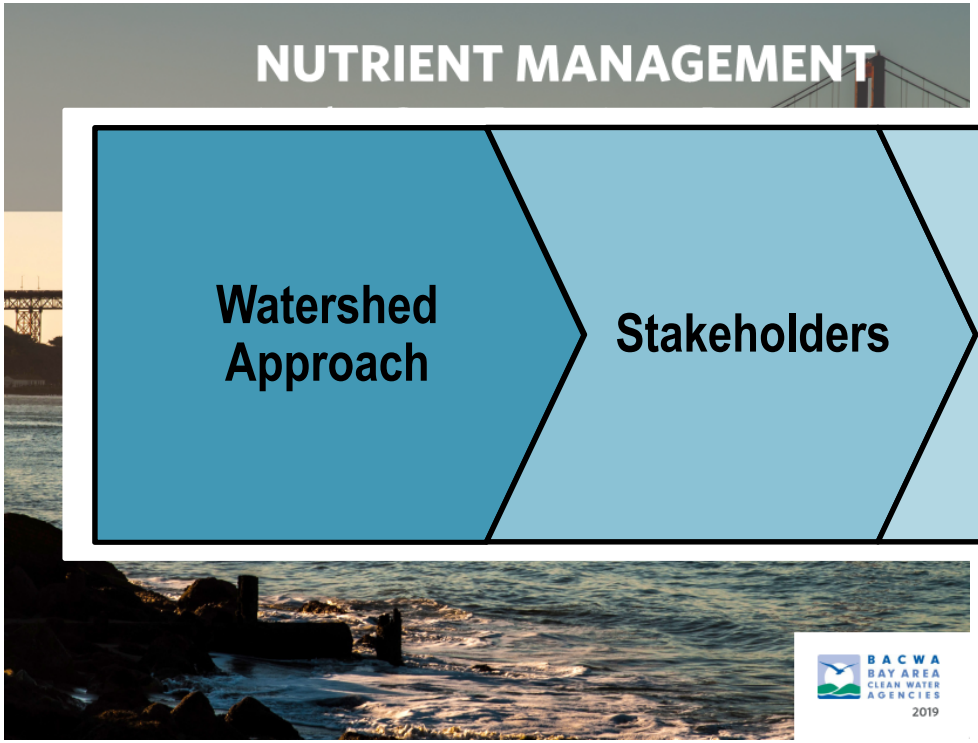
Collaboration:

Key to Practical Nutrient Management



Working Together for Practical Regulation

BACWA
BAY AREA
CLEAN WATER
AGENCIES

BACWA
(wastewater utilities)

California
Water Boards

Regional Water Board
(regulatory)

SFEI | AQUATIC SCIENCE CENTER
SAN FRANCISCO ESTUARY INSTITUTE & THE AQUATIC SCIENCE CENTER

San Francisco Estuarine Institute
(science)

SAN FRANCISCO
BAYKEEPER

Non-Govt Organizations
(NGOs)

The approach in the Bay Area for managing nutrients has received national attention and lauded for its collaboration, as evidenced by receipt of a National Environmental Achievement Award in 2019 from the National Association of Clean Water Agencies (NACWA). NACWA is the nationally recognized leader in legislative, regulatory, and legal clean water advocacy.

NATIONAL Environmental Achievement AWARDS

1st Nutrients Watershed Permit 2014

NO LOAD CAPS

SUPPORT FOR SCIENCE

GROUP REPORTING

REGIONAL STUDY (PLANT OPTIMIZATION AND UPGRADES STUDY)

Regional Study Key Outcomes

Strategy	Total N Load Reduction to the Bay	Total P Load Reduction to the Bay	Total Present Value ($ Mil)
Optimization	7%	34%	$266 M
Sidestream Treatment	19%	12%	$766 M
Upgrade Level 2	57%	59%	$9.4 B
Upgrade Level 3	82%	88%	$12.4 B

2nd Watershed Permit (R2-2019-0017)

CALIFORNIA
Water Boards

GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

San Francisco Bay Regional Water Quality Control Board

ORDER No. R2-2019-0017
NPDES No. CA0038873

WASTE DISCHARGE REQUIREMENTS FOR NUTRIENTS FROM MUNICIPAL WASTEWATER DISCHARGES TO SAN FRANCISCO BAY

The following dischargers are subject to waste discharge requirements (WDRs) set forth in this Order, for the purpose of regulating nutrient discharges to San Francisco Bay[1] and its contiguous bay segments:

2nd Nutrients Watershed Permit 2019

NO LOAD CAPS

INCREASED SUPPORT FOR SCIENCE

REGIONAL STUDIES (WATER RECYCLING AND NATURE BASED SOLUTIONS)

RECOGNIZES EARLY ACTORS

2nd Watershed Permit (R2-2019-0017) Core Tasks

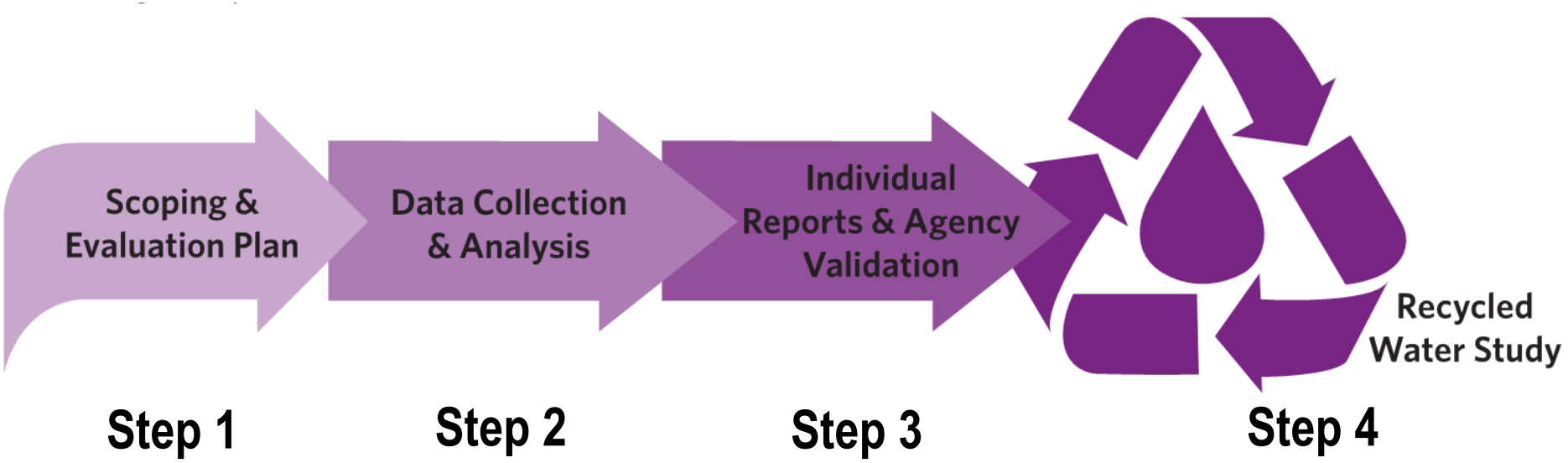
Regional Evaluation of Potential Nutrient Discharge Reduction by Water Recycling

The major Dischargers listed in Table 1 shall, individually or in collaboration with other regional stakeholders, evaluate options and develop planning-level costs for nutrient discharge reduction by water recycling as described below. These requirements do not apply to the minor Dischargers listed in Table 1.

Regional Evaluation of Potential Nutrient Discharge Reduction by Natural Systems

The major Dischargers listed in Table 1 shall, individually or in collaboration with other regional stakeholders, evaluate options and develop planning-level costs for nutrient discharge reduction by natural systems (e.g., wetlands and horizontal levees) as described below. These requirements do not apply to the minor Dischargers listed in Table 1.

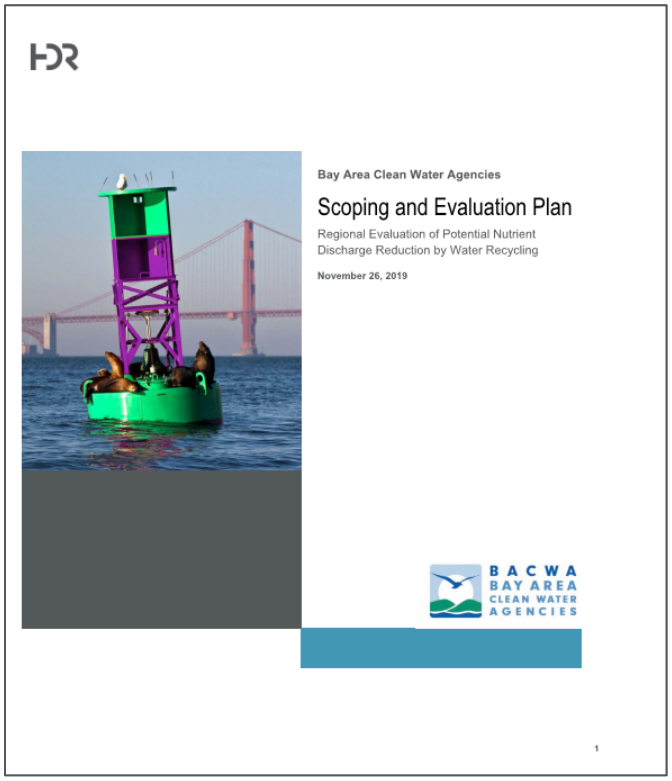
Recycled Water Approach



Step 1: Scoping and Evaluation Plan

Scoping Plan Permit Language:

By December 1, 2019, the Dischargers shall, individually or in collaboration with regional stakeholders, submit a Scoping Plan describing the level of work proposed to conduct the evaluation. The Scoping Plan shall include, but is not limited to, the level of work to identify opportunities for potential wastewater recycling (e.g., for irrigation) for each Discharger's facility and subembayment.



Link to submitted Scoping & Evaluation Plan:
https://bacwa.org/wpcontent/uploads/2019/12/BACWA_RW_ScopingEvalPlan_20191126.pdf

Step 1: Scoping and Evaluation Plan

Evaluation Plan Permit Language:

If a Discharger identifies opportunities, it shall proceed with an evaluation for its facility and subembayment. By July 1, 2020, the Discharger shall, individually or in collaboration with regional stakeholders, submit an Evaluation Plan and schedule describing the methods and means for conducting the evaluation for the sites that are identified in the Scoping Plan. The evaluation shall include, but not be limited to, the following tasks:

- Description of all treatment plants, treatment plant processes, and service area;
- Estimation of nitrogen (total inorganic nitrogen) and phosphorous (total phosphorous) discharge reductions associated with each recycled water opportunity;
- Identification of ancillary adverse effects and ancillary benefits from each project (e.g., reduction of natural water resource diversion, reduction of potable water demand, or reduction of chemical fertilizer reliance);
- Assessment of the feasibility, efficacy, reliability, and cost-effectiveness of each opportunity; and
- Identification of potential challenges to implementing each opportunity (e.g., regulatory barriers).

The Dischargers shall start implementing the Evaluation Plan tasks for each identified site within 45 days of submittal.

Link to submitted Scoping & Evaluation Plan:
https://bacwa.org/wpcontent/uploads/2019/12/BACWA_RW_ScopingEvalPlan_20191126.pdf

Step 2: Data Collection and Analysis (Data PLUS Planning Documents (e.g., Master Plans))

BACWA Recycled Water Survey 2015

Agency Name (Recycled Water Producer):

Recycled Water Distributors/Retailers:

CURRENT AND PROJECTED FUTURE AMOUNT OF RECYCLED WATER BY USE CATEGORY (in acre-feet)

	Total Distributed	Confidence (see Note B)	Golf Course Irrigation (See Note C)	Landscape (see Note D	Commercial (see Note E)	Industrial (see Note F)	Agricultural (see Note G)	Environmental Enhancement (see Note H)	Internal Use (see Note I)	GW Recharge for Indirect Potable Reuse	Surface Water Augmentation	Direct Potable Reuse	Other Non-potable Reuse (See Note J)	RO concentrate or other return flows (see Note K)	Comments
Type of RW (See Note A):															
Current 2015			0	0	0	0	0	0	0	0	0	0	0	0	
Future 2020															
Future 2025															
Future 2030															
Future 2035															
Future 2040															
Future 2045															

2015 MONTHLY RECYCLED WATER DISTRIBUTION DATA BY USE CATEGORY (in acre-feet)

	TOTAL		Golf Course	Landscape	Commercial	Industrial	Agricultural	Environ. Enhanceme	Internal Use	GW Recharge	Surface Water	Direct Potable	Other Non-potable	Return Flows	Comments
January															
February															

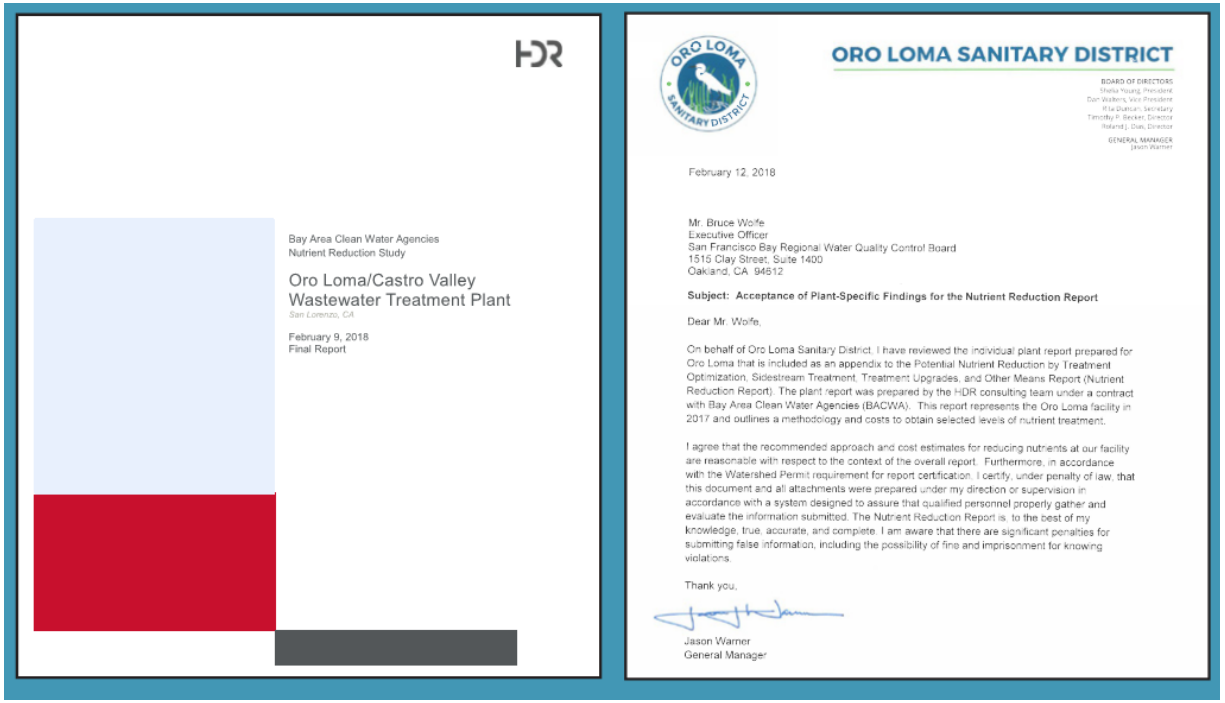
The RFI will include a similar request as in 2015, along with a request for cost estimates and best available documentation

Step 3: Individual Reports & Agency Validation

Individual Reports will be submitted to each agency that will include:

- Executive summary
- Plant Introduction
- Description of Study Approach
- Results and Discussion:
  - Quantitative values (flows, nutrient load reductions, cost estimates, unit metrics, etc.)
  - Adverse and ancillary impacts
  - Likelihood of project implementation

<u>Each agency will have the opportunity to review their report</u>



HDR

Bay Area Clean Water Agencies
Nutrient Reduction Study

Oro Loma/Castro Valley
Wastewater Treatment Plant
San Lorenzo, CA

February 9, 2018
Final Report

ORO LOMA SANITARY DISTRICT

BOARD OF DIRECTORS
Shelia Young, President
Dan Walters, Vice President
Rita Duncan, Secretary
Timothy P. Becker, Director
Roland J. Diaz, Director

GENERAL MANAGER
Jason Warner

February 12, 2018

Mr. Bruce Wolfe
Executive Officer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Acceptance of Plant-Specific Findings for the Nutrient Reduction Report

Dear Mr. Wolfe,

On behalf of Oro Loma Sanitary District, I have reviewed the individual plant report prepared for Oro Loma that is included as an appendix to the Potential Nutrient Reduction by Treatment Optimization, Sidestream Treatment, Treatment Upgrades, and Other Means Report (Nutrient Reduction Report). The plant report was prepared by the HDR consulting team under a contract with Bay Area Clean Water Agencies (BACWA). This report represents the Oro Loma facility in 2017 and outlines a methodology and costs to obtain selected levels of nutrient treatment.

I agree that the recommended approach and cost estimates for reducing nutrients at our facility are reasonable with respect to the context of the overall report. Furthermore, in accordance with the Watershed Permit requirement for report certification, I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The Nutrient Reduction Report is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Thank you,

Jason Warner
General Manager

BACWA members can expect a similar level of professional care as provided for the 1st Permit

Step 4: Recycled Water Report (Similar Approach as the 1st Watershed Report)

Summary of all the individual agency reports that will include the following:

- Executive summary that presents the overall findings
- Basis of evaluation (i.e., approach and methodologies)
- Results summarized by subembayment and baywide
- Summary of study limitations
- Key observations
- Appendices (e.g., individual agency reports)

BACWA members can expect a similar level of professional care as provided for the 1st Permit

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