Q3 Consulting

MEMORANDUM

To: Sage McCleve JN 040.074

From: Tom Ryan

Date: May 11, 2022

Subject: Subarea 29 Specific Plan Amendment – Water Quality Memo

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This technical memorandum summarizes the proposed concept level water quality mitigation measures evaluated by Q3 Consulting for the project sites owned by Lewis Management Corp. and Richland Communities. The project site is located in the City of Ontario in San Bernardino County. The project site is the Subarea 29 Specific Plan Amendment area, located along the southern edge of the New Model Colony (NMC) East, also referred to as Ontario Ranch, development. The Amendment area includes PA 30, 31, 32, 33, and 34. The project site is approximately 151 acres and the proposed land uses comprise of school development and majority residential development.

The water quality analysis for PA 30 and PA 31 is currently being prepared by others and will conform to the requirements set forth in the WQMP Guidance, which includes gross solid treatment control devices. The conceptual water quality measures for PA 32, 33, and 34 are evaluated in this technical memorandum.

Background

PA 32, 33, and 34 drain towards the main storm drain lines along Haven Ave and Mill Creek and the County Line Channel. The main storm drain lines that convey runoff from the project site discharge into the County Line Channel located along Bellegrave Ave. The County Line Channel discharges into Cucamonga Channel and then ultimately into the Mill Creek Wetlands (MCW).

The goals of this project were the following:

- Identify and establish water quality criteria based on downstream receiving water stipulations and limits based on the governing NPDES MS4 permit other than what has been agreed upon for areas included in the Mill Creek Wetlands watershed.
- Provide recommendations for concept level water quality mitigation measures and best management practices (BMP)

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Water Quality Criteria

Water Quality Regulatory Requirements

Surface water quality is subject to federal, state, and local water quality requirements. The table below summarizes the general requirements.

Table 1-1. Regulatory Requirements

Water Quality Requirement	Enforcing Agency
Clean Water Act	United States Environmental Protection Agency (US EPA), but largely delegated to the SWRCB and RWQCB
National Pollutant Discharge Elimination System Permit (NPDES)	California State Water Resources Control Board (SWRCB)
Municipal Separate Storm Sewer System Permit (MS4)[1]	Regional Water Quality Control Board (RWQCB)
Report of Waste Discharge (ROWD)	County of San Bernardino
Water Quality Management Plan (WQMP)	City of Ontario

The Federal Clean Water Act is the principal federal statute governing water quality. The Clean Water Act requires the State to adopt water quality standards for water bodies and have those standards approved by the EPA. The State agencies that set water quality standards in California are the California State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board's (RWQCB's) that are under the SWRCB's purview.

Under the Clean Water Act, National Pollutant Discharge Elimination System (NPDES) permits require effluent limits necessary to meet water quality standards for pollutants that may cause or contribute to an exceedance of a State Water Quality Standard.

The MS4 is the NPDES permit governing storm water discharges and certain non-storm water discharges to the public storm drain system within the areas of San Bernardino County subject to the Santa Ana RWQCB jurisdiction. The MS4 Permit relies primarily on the Report of Waste Discharge (ROWD) prepared by the San Bernardino County Flood Control District and the Incorporated Cities of San Bernardino County within the Santa Ana Region. The ROWD in conjunction with the Santa Ana River Watershed Technical Guidance Document for WQMP Final (September 2013) set forth BMPs and other water quality control measures to manage water quality for storm water discharges to the municipal storm drain system.

The ROWD is the principal policy and guidance document for the countywide NPDES Storm Water Program. The ROWD requires preparation of WQMPs (project-specific plan) in connection with new development projects. The City of Ontario is responsible for requiring applicants to submit a Water Quality Management Plan (WQMP) at appropriate discretionary and ministerial permit issuance levels. WQMPs shall identify structural and non-structural BMPs as specified in the Model WQMP manual guidelines for new development and redevelopment, detail BMP implementation, assign long-term maintenance responsibilities and reference the location(s) of structural BMPs.

For this project, the NPDES MS4 permit requirements will be satisfied. In the future, a WQMP will be prepared and will adhere to the water quality guidance documents mentioned previously.

NMC East Water Quality Management Plan Guidance (WQMPG)

The NMC East WQMPG was prepared in order to establish a uniform and integrated approach in meeting MS4 requirements and provides overall guidance for NMC East Builders and the City of Ontario as it relates to BMP selection and implementation. The water quality mitigation measures presented in this report conform to the water quality mitigation guidelines stated in the WQMPG.

Subarea 29 (Hettinga) Specific Plan Draft Environmental Impact Report (DEIR)

The DEIR was prepared by Albert A. Webb Associated in June 2006 to inform decision-makers and the public of potential significant environmental effects associated with the Subarea 29 Specific Plan. The water quality mitigation measures presented in this report conform to the water quality mitigation guidelines stated in the DEIR.

Receiving Waters

The project site is located within the Santa Ana River Watershed. The Santa Ana River (SAR) is the major surface water body within the Santa Ana Watershed. SAR Reach 3 is the portion of the SAR nearest to the project site. The project site is located approximately 3 miles north of SAR Reach 3. Runoff generated from the project site will flow to the County Line Channel and Cucamonga Creek, which flows into Mill creek and the SAR/Prado Basin.

Pollutants of Concern (POC)

Per the NMC East WQMPG, the applicable POCs for the project site's land uses are listed in the Table 1-2.

Table 1-2. Pollutants of Concern for Project

Project Categories/Land Uses	General Pollutant Categories								
	Bacteria/Virus	Heavy Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen Demanding Substances	Oil & Grease
Residential Development (Detached)	E	N	E	E	N	E	E	E	E
Residential Development (Attached)	P	N	E	E	N	E	E	P(1)	P(2)
Streets/Highways/Freeways	P(6)	E	P(1)	P(1)	E(4)	E	E	P(1)	E

E = expected
P = potential
N = not expected
(1) A potential Pollutant if landscaping or open area is present on site.
(2) A potential Pollutant if the project includes uncovered parking areas.
(3) A potential if land use involves animal waste.
(4) Including petroleum hydrocarbons.
(5) Including solvents.
(6) Bacterial indicators are routinely detected in pavement runoff.

Table 1-3 shows the current Total Maximum Daily Loads (TMDL), as identified in the 303d impairment list.

Table 1-3. Total Maximum Daily Loads for Receiving Waters within Vicinity

Receiving Water	Water Body ID	303(d) Impairments	Applicable TMDL ?	Distance from Project (miles)
Cucamonga Creek Reach 1 (Valley Creek)	CAR801210001999021110136	Zinc Copper Cadmium Lead	Not Applicable	<0.1 miles
Mill Creek	CAR801210001999021114454 0	Indicator Bacteria Nutrients Total Suspended Solids	USEPA Approved Prado Area Streams Pathogen TMDL (2007)	<2 miles
Chino Creek 1A	CAR801210002008071512544 7	Indicator Bacteria Nutrients	USEPA Approved Prado Area Streams Pathogen TMDL (2007)	<3 miles
Santa Ana River, Reach 3	CAR801210001999021114035 3	Copper Indicator Bacteria Lead	USEPA Approved Prado Area Streams Pathogen TMDL (2007)	<4 miles
Prado Basin Management Zone	CAW801210001999101410360 0	pH	Not Applicable	<4 miles

A TMDL is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that pollutant. The TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant. These targets will facilitate the selection of water quality treatment-type BMP for the project(s) within the watershed.

Stormwater Quality Credit (SWQ) and Mill Creek Wetlands (MCW)- Regional BMP

The off-site MCW is part of the Santa Ana Watershed Project Authority's Integrated Regional Water Management Plan and is designed to treat dry and wet weather flows using wetland processes to address sediment, metals, bacteria, and nutrient removal. This facility is a product of public-private partnership, which includes mitigation banking currencies. MCW is located within the Prado Basin, downstream of the Cucamonga Channel.

As a result, runoff from these planning areas is covered by the MCW mitigation banking currencies. Per agreement with the City of Ontario, planning areas PA 32, 33, 34 are required to only treat for gross solid pollutants. Planning areas 30 and 31 will be responsible for either partially or fully adhering to the requirements of the NPDES Permit for stormwater treatment. A portion of these PA's stormwater runoff could be included in the MCW mitigation bank if the owner chooses. The Final WQMP will resolve the water quality requirements for PA 30 and 31.

Gross Solid Removal

The gross solids in the project runoff will need to be removed prior to discharge into MCW. Best management practice (BMP) selections can include but not limited to:

- Nutrient separating baffle box (NSBB)
- Contech CDS unit
- Catch basin screens
- Other approved screening devices

Concept Level Water Quality Mitigation

The water quality analysis for PA 30 and PA 31 was evaluated in a separate report and is not part of this evaluation, although the requirements for water quality treatment will be consistent with those implemented in this study.

For PA 32, 33, and 34, the following conceptual water quality mitigation measures are recommended:

Site Design BMP

The appropriate site design BMPs should be implemented if necessary and should include but not limited to: maximizing permeable areas, conserving natural areas, and minimizing directly connected impervious areas.

Source Control BMP

The appropriate non-structural and structural source control BMPs should be implemented and include but not limited to the BMPS listed in Table 1-3 and Table 1-4.

Table 1-3. Source Control BMPs per WQMPG

Individual Project Category/Project Feature BMPs	Non-Structural BMPs	Routine Structural BMPs	Alternative Material BMPs
Fueling Areas (SD-30)	Education of Property Owners	Site Design and Landscape Planning (SD-10)	Pervious Pavement (SD-20)
Air/Water Supply Area Drainage	Activity Restrictions	Hillside Landscaping	Alternative Building Materials (SD-21)
Maintenance Bays and Docks (SD-31)	Spill Contingency Plan	Roof Runoff Controls (SD-11)	
Vehicle Washing Areas (SD-33)	Employee Training / Education Program	Efficient Irrigation (SD-12)	
Outdoor Material Storage Areas (SD-34)	Street Sweeping Private Streets and Parking Lots	Protect Slopes and Channels	
Outdoor Work Areas (SD-35)	Common Areas Catch Basin Inspection	Storm Drain System Signs (SD-13)	
Outdoor Processing Areas (SD-36)		Inlet Trash Racks	
Wash Water Controls for Food Preparation Areas		Energy Dissipators	
		Trash Storage Areas (SD-32) and Litter Control	

Table 1-3. Source Control BMPs per DEIR

1. Where landscaping is proposed, drain rooftops into adjacent landscaping prior to discharging to the storm drain.
2. Where landscaping is proposed, drain impervious sidewalks, walkways, trails and patios into adjacent landscaping.
3. Increase the use of vegetated drainage swales in lieu of underground piping or imperviously lined swales.
4. Use one or more of the following: - Rural swale system: street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings; - Urban curb/swale system; street slopes to curb; periodic swale inlets drain to vegetated swale/biofilter; - Dual drainage system: First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder, high flows connect directly to municipal storm drain systems; - Other comparable design concepts that are equally effective.
5. Use one or more of the following features for design of driveways and private residential parking areas: - Design driveways with shared access, flared (single lane at street) or wheel strips (paving only under tires); or, drain into landscaping prior to discharging to the municipal storm drain system; - Uncovered temporary or guest parking on private residential lots may be paved with a permeable surface; or designed to drain into landscaping prior to discharging to the municipal storm drain system; - Other comparable design concepts that are equally effective.
6. Use one or more of the following design concepts for the design of parking areas: - Where landscaping is proposed in parking areas, incorporate swaled (depressed) landscape areas into the drainage design or utilize vegetated infiltration trenches between opposing parking stalls; - Overflow parking (parking stalls provided in excess of the Agency's minimum parking requirements) may be constructed with permeable paving; - Other comparable design concepts that are equally effective.

Treatment Control BMP

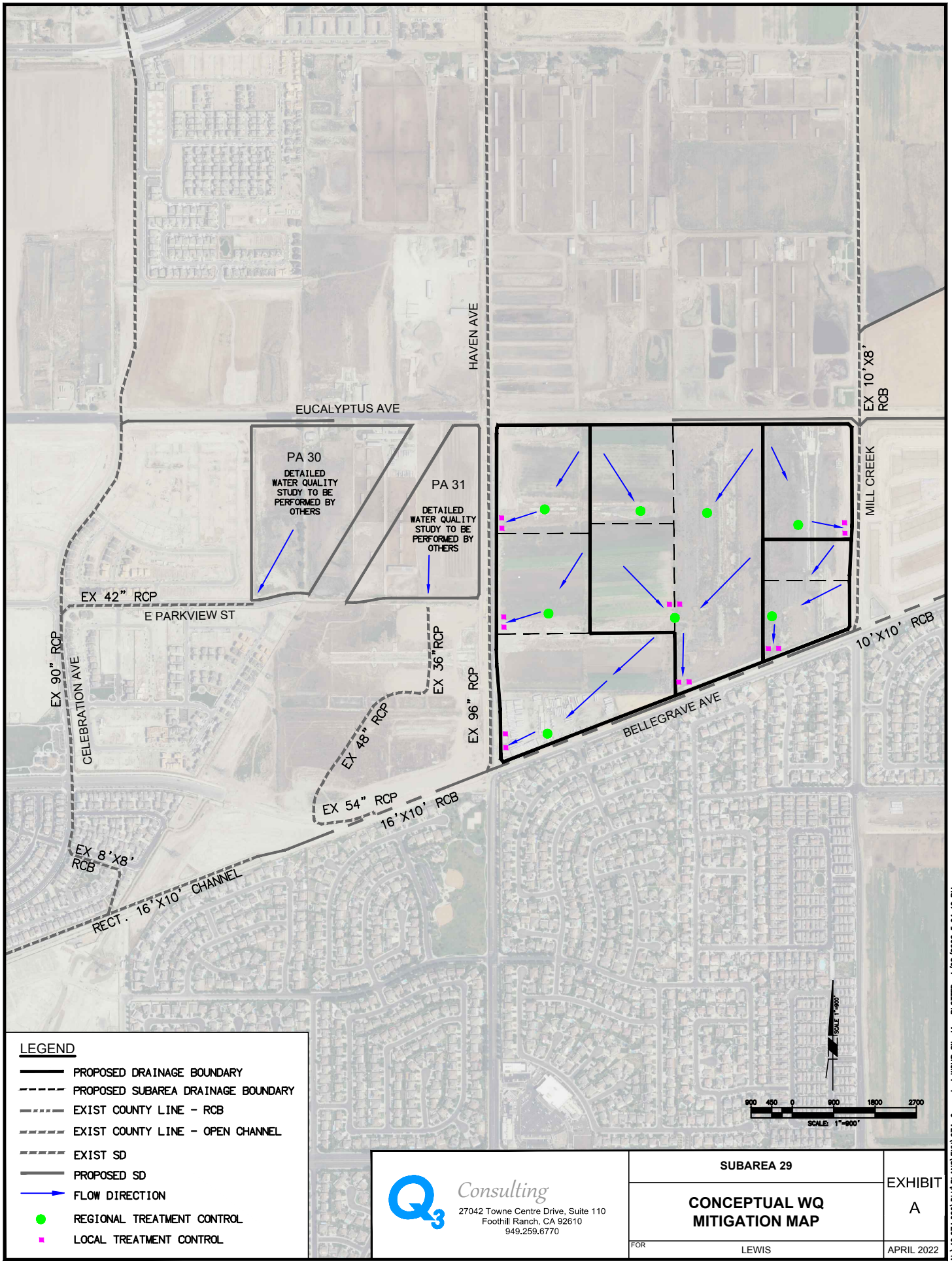
Each planning area will be required to implement treatment control BMPs to remove gross solids. Due to the construction of the downstream MCW, no other pollutant removal mechanisms are necessary.

Gross solid removal BMPs can be implemented locally or regionally. Catch basin inlet screening for example provides local screening at streets and inlets. Regional screening devices can be implemented along the alignments of the storm drain system. These devices typically are "off-line" structures that treat diverted low flows from the main storm drain line. "In-line" structures are not typically feasible as the hydraulic head losses could impact the storm drain line system's capacity. ***Exhibit A*** shows some recommended locations for regional implementation of regional gross solid treatment devices.

A treatment train of screening devices could be implemented that include both local and regional devices. These devices can be constructed to remove larger gross solids at the catch basins, and finer solid in the regional facilities downstream.

Conclusions

Implementation of the proposed BMP facilities within PA 32, 33 and 34 will provide the required levels of treatment identified in the MS4 Permit, when utilized in conjunction with the MCW. The MCW also provides exemption from Hydraulic Conditions of Concern (HCOC) for the receiving water.



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SUBAREA 29

CONCEPTUAL WQ MITIGATION MAP

FOR LEWIS

EXHIBIT A

APRIL 2022

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