City of Morro Bay
City Council Agenda

Mission Statement
The City of Morro Bay is dedicated to the preservation and enhancement of the quality of life. The City shall be committed to this purpose and will provide a level of municipal service and safety consistent with and responsive to the needs of the public.

NOTICE OF
SPECIAL MEETING
TUESDAY, SEPTEMBER 23, 2014
MORRO BAY VETERAN'S HALL – 5:00 P.M.
209 SURF STREET, MORRO BAY, CA

ESTABLISH QUORUM AND CALL TO ORDER

PUBLIC COMMENT RE: ITEMS ON THE AGENDA

SPECIAL MEETING AGENDA ITEMS:

I. PRESENTATION AND REVIEW OF REPORT REGARDING REGULATORY IMPLICATIONS OF DISCHARGE OPTIONS FOR THE FUTURE CITY OF MORRO BAY WATER RECLAMATION FACILITY BY LARRY WALKER & ASSOCIATES

II. CONSIDERATION OF HOLDING JOINT WRFCAC / CITY COUNCIL MEETINGS ON OCTOBER 8th, OCTOBER 22nd AND NOVEMBER 5th

III. UPDATE ON THE STATUS OF THE CALIFORNIA MEN'S COLONY OPTION EVALUATION

ADJOURNMENT

DATED: September 18, 2014

_____
Jamie L. Irons, Mayor

MATERIALS RELATED TO AN ITEM ON THIS AGENDA SUBMITTED TO THE CITY COUNCIL AFTER DISTRIBUTION OF THE AGENDA PACKET ARE AVAILABLE FOR PUBLIC INSPECTION AT CITY HALL LOCATED AT 595 HARBOR STREET; MORRO BAY LIBRARY LOCATED AT 625 HARBOR STREET; AND MILL'S COPY CENTER LOCATED AT 495 MORRO BAY BOULEVARD DURING NORMAL BUSINESS HOURS.

IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT, IF YOU NEED SPECIAL ASSISTANCE TO PARTICIPATE IN A CITY MEETING, PLEASE CONTACT THE CITY CLERK'S OFFICE AT LEAST 24 HOURS PRIOR TO THE MEETING TO INSURE THAT REASONABLE ARRANGEMENTS CAN BE MADE TO PROVIDE ACCESSIBILITY TO THE MEETING.

SPECIAL AGENDA NO: I

MEETING DATE: September 23, 2014

Staff Report

TO: **Honorable Mayor and City Council** **DATE: September 18, 2014**

FROM: **Rob Livick, PE/PLS - Public Services Director/City Engineer**

SUBJECT: **Presentation and Review of Report Regarding Regulatory Implications of Discharge Options for the Future City of Morro Bay Water Reclamation Facility by Larry Walker and Associates**

RECOMMENDATION

Staff recommends the Council review the report and provide any comments to be addressed in the final report being presented at the November 12, 2014 City Council meeting.

BACKGROUND/DISCUSSION

The attached memorandum is a series of reports the City Council will use in making the final decision on where the City should treat its wastewater. Other reports will include financing implications as well as impacts/benefits to groundwater basins. These reports will culminate in a final decision currently scheduled for the November 12, 2014 City Council meeting.

The goal of the City is to build a new Water Reclamation Facility (WRF) that is reclamation ready and will ultimately produce tertiary, disinfected wastewater in accordance with Title 22 requirements for unrestricted urban irrigation. This level of treatment is appropriate for a wide range of reuse options that are under consideration by the City. While the intent is to re-use most of the Morro Bay WRF's effluent, discharging treated effluent to surface water (fresh or salt) or land during both dry and wet weather will still be necessary.

While numerous sites for the Morro Bay WRF have been considered, the City is currently focusing their evaluation on two sites: Rancho Colina and the California Men's Colony (CMC). The purpose of the attached memorandum is to evaluate the regulatory implications of the discharge options associated with the Rancho Colina and CMC sites.

ATTACHMENTS

1. Draft Report (Memorandum) from Larry Walker and Associates dated September 17, 2014

Prepared by: __RL __ **Dept. Review: RL__**

City Manager Review:_____

City Attorney's Review:_____

DRAFT
Memorandum

LARRY WALKER ASSOCIATES

DATE: September 17, 2014

TO: Mike Nunley
Michael K. Nunley & Associates, Inc.
P.O. Box 1604
Arroyo Grande, CA 93421

Cc: Betsy Elzufon, LWA

SUBJECT: Regulatory Implications of Discharge Options for the Future City of Morro Bay Water Reclamation Facility

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The City of Morro Bay-Cayucos Wastewater Treatment Plant currently operates under National Pollution Discharge Elimination System Permit (NPDES) No. CA0047881, Waste Discharge Requirements (WDR) Order No. R3-2008-0065. The current discharge to the Pacific Ocean occurs by virtue of a 301(h) exception allowing partial secondary treatment. The City of Morro Bay (City) is planning to build a new Water Reclamation Facility (Morro Bay WRF) that is Reclamation Ready and which will ultimately produce tertiary, disinfected wastewater in accordance with Title 22 requirements for unrestricted urban irrigation. This level of treatment is appropriate for a wide range of reuse options that are under consideration by the City. While the intent is for re-use of most of the Morro Bay WRF's effluent, an option for discharging treated effluent to surface water or land during both dry and wet weather will still be necessary.

Many sites for the Morro Bay WRF have been considered in the past, however, the City is currently focusing evaluation on two sites: Rancho Colina and the California Men's Colony (CMC). The purpose of this memorandum is to evaluate the regulatory implications of the discharge options associated with the Rancho Colina and CMC sites.

As discussed in more detail below, the Rancho Colina site would be used to construct an upgraded facility for the current service area, the City of Morro Bay. If the existing CMC facility was upgraded, it would likely be a regional facility that would serve California Men's Colony, other County customers, the Cayucos Sanitary District and the City of Morro Bay.

The types of permits and the governing water quality objectives that would apply to each of the potential waste discharge scenarios is summarized in Section 1 and discussed in more detail in the

remainder of the memorandum. Regulatory implications of the environmental settings and of several future state and federal regulatory actions are described. Recent effluent data from the current Morro Bay-Cayucos WWTP was screened using the suite of water quality objectives that pertains to each of the discharge scenarios. This resulted in identification of several constituents that might be assigned numeric effluent limits in the permit for the new Morro Bay WRF. The more significant regulatory implications of the discharge scenarios are summarized in a matrix. As discussed elsewhere, the regulatory requirements and other program elements associated with the anticipated recycling program are expected to be similar for the different sites with the one difference being proximity to potential recycled water customers.

1. Summary and Conclusions

The most significant regulatory factors identified in this evaluation are contrasted for the discharge options in Table 1. The implications of each regulatory option are summarized below and discussed in more detail in the following sections:

- Section 2. Current Regulatory Implications
- Section 3. Effluent Quality Evaluation
- Section 4. Considerations for the Future

The options evaluated include discharges to groundwater through land disposal (percoloation ponds), discharges to inland surface water (i.e., Chorro Creek or Morro Creek) and discharges to the Ocean. When evaluating the discharge options to inland surface waters, different requirements associated with each creek are also highlighted given that Chorro Creek is tributary to Morro Bay estuary while Morro Creek flows directly to the ocean.

PERCOLATION PONDS

The process for applying for a WDR (i.e., Waste Discharge Requirements) for discharge to percolation ponds is the simplest among the discharge options and avoids involvement of USEPA. In addition, permit cycles for WDRs are indeterminant, requiring fewer rounds of reapplication. Many fewer constituents are likely to be assigned numeric effluent limits for discharge to percolation ponds. Percolation ponds are unlikely to be named a source in future TMDLs, unless contaminated groundwater affects Morro Creek. Bacteria limits and toxicity provisions are not likely in a WDR. However, there is a possibility that numeric effluent limits for total nitrogen and salts may apply to percolation ponds, which might necessitate additional treatment processes.

INLAND SURFACE WATER

Several future regulatory actions are likely to affect permits for discharges to Morro Creek or Chorro Creek that will not apply to discharges to the ocean or percolation ponds. Both the State Policy on Nutrients and the State's Implementation Plan for Biological Integrity are likely to result in lower recommended nutrient levels in streams and enclosed estuaries. In streams, eventual impairment thresholds for nitrogen are likely to be in the vicinity of 1.0 mg/L total nitrogen; limits for P may be about 1/10th the value for total N. The State Toxicity Policy has several implications for discharges to the creeks that may not apply to an ocean discharge and will not apply to percolation ponds. The new numeric toxicity criterion is highly controversial and will replace the current narrative criterion. Toxicity provisions in future permits will be more costly than in current permits and will more easily lead to violations. Acute tests will be required in addition to

chronic tests. Dischargers with no dilution credits will not be able to consider in-stream concentrations to determine compliance.

Among the inland discharges, discharge to Chorro Creek (by expansion of the CMC facility to serve the City) is accompanied by the highest regulatory burden and regulatory risk. Discharge to Chorro Creek will likely result in numeric effluent limits for total nitrogen, orthophosphorus, one or more salts, and bacteria that have implications for treatment. Discharge to Chorro Creek will likely require consideration of governance options since it would involve partnering with other agencies to form a regional facility. Compared to the Morro Valley Basin, Salt and Nutrient Management Plan (SNMP) development for the Chorro Valley Basin may be complicated by a larger number of stakeholders (that may include regulatory agencies such as NOAA Fisheries and CDFW) and the need to account for more diverse land uses in a larger watershed.

Discharges to Chorro Creek will be scrutinized regarding potential downstream effects on high profile, state-protected estuarine habitat of national significance that provides habitat for dozens of listed species. Chorro Creek itself is officially named as critical habitat for federally listed steelhead and California red-legged frog. Actions that affect flow in Chorro Creek may attract the attention of state and federal resource agencies and petitions to remove discharge from the creek in the future (e.g., as reclaimed water demand increases) will require a Change Petition to the SWRCB Division of Water Rights and will be complicated by water rights issues and Biological Opinions. Requirements to maintain a minimum flow has been a challenge for the City of San Luis Obispo (SLO) in implementing its recycled water program. Due to the presence of steelhead trout, SLO has dedicated a portion of its Water Reclamation Facility effluent to maintain a minimum flow of 2.5 cfs in San Luis Obispo Creek for in-stream beneficial uses, in-stream habitat uses in particular. This minimum dedicated discharge is included in SLO's Water Reuse Project's SWRCB permit and is a required term and condition of the Biological Opinion issued by NOAA Fisheries. Consequently, SLO cannot fully utilize the reclaimed water generated as part of the Water Reuse Project.

Owing to the future regulatory actions named above, Chorro Creek may be subject to impairment evaluations that may result in more stringent nutrient regulations. The reopener provision in the Chorro Creek Nutrient Total Maximum Daily Load (TMDL) provides an opportunity for regulators to exercise new screening tools arising from the state policies on nutrients and biointegrity to revise POTW allocations downward.

Discharge to Morro Creek is accompanied by many of the same regulatory risks as discharge to Chorro Creek. Morro Creek will be similarly affected by the Biological Integrity assessment procedures and the Nutrient Policy for wadeable streams. The Toxicity and Bacteria policies will apply to both Creeks. However, Morro Creek does not discharge to a large, sensitive estuary, and has not previously been listed as impaired on the 303(d) list. There are no TMDLs for Morro Creek that can potentially be reopened and revised with unpredictable outcomes for dischargers.

Identification of constituents that might require numeric effluent limits for new types of discharges (Morro Creek, Chorro Creek, and percolation ponds) was based on a review of current effluent data. In addition, projected effluent quality based on planned upgrades to the treatment process was considered for ammonia, nitrogen, and total coliform. Salts data available from the *2012 Recycled Water Feasibility Study* (Dudek, Draft March 9, 2012) were also used for the evaluation.

OCEAN

The most significant benefits of maintaining the current ocean outfall for wet weather discharges, at a minimum, are (1) dilution will be granted in the permit resulting in less stringent effluent limits, (2) effluent limits for nutrients (nitrogen and phosphorus) and salts will be avoided, and (3) there is less risk from future regulatory actions planned by the SWRCB or from environmental sensitivity of receiving water. There would be no minimum flow requirements that could restrict the quantity of water that can be used for recycling. The Bacteria Policy would result in a revision to the Ocean Plan, but the enterococcus limits that are being proposed so far are not significantly different than the limits in the current Ocean Plan. In addition, the current ocean outfall presents opportunities for brine disposal to support local or regional solutions addressing water supply and salt and nutrient management.

Table 1. Comparison of Significant Regulatory Factors for Discharge Scenarios

	Rancho Colina			California Men's Colony
	Ocean Discharge	**Discharge to Surface Water**	**Discharge to Land**	**Discharge to Surface Water**
	Existing Ocean Outfall	**Morro Creek**	**Percolation ponds**	**Chorro Creek**
Type of Permit Needed	NPDES	NPDES	WDR	Modification of existing NPDES permit or issuance of new NPDES permit
Agencies that Approve the Discharge Permit	Regional Water Quality Control Board (RWQCB), USEPA	RWQCB, USEPA	RWQCB	RWQCB, USEPA
Permit Cycle	5 years	5 years	indefinite	5 years
Would Dilution be Granted?	Yes (Minimum of 133:1; additional dilution may be available)	No	No	No
Other Agencies that might evaluate the effects on Beneficial Uses in some contexts	unlikely	CDFW, NMFS	N/A	CDFW, NMFS
Beneficial Uses Assigned to Receiving Water[1]	REC1, REC2, IND, NAV, MAR, SHELL, COMM, RARE, WILD, MIGR	MUN, AGR, GWR, REC1, REC2, WILD, COLD, WARM, MIGR, SPWN, RARE, EST, FRESH, COMM	AGR, MUN	MUN, AGR, GWR, REC1, REC2, WILD, COLD, WARM, MIGR, SPWN, RARE, FRESH, COMM, BIOL
Will existing TMDLs affect the permit?	No	No	No	Nutrient TMDL: yes, N removal might be required and phosphate limits are likely. TMDL may be reopened in 2016. Sediment TMDL: maybe, if stream erosion is increased Bacteria TMDL: maybe (Title 22 bacteria limits may apply to discharge to stream)
Constituents in current effluent data set that may require an effluent limit	total cadmium, total copper, cyanide, nickel (salts), total zinc, dioxin,	antimony, total copper, cyanide, mercury, ammonia, dioxin, bis(2-ethylhexyl) phthalate	antimony, total nitrogen (based on ammonia data), bis(2-ethylhexyl) phthalate, total coliform	antimony, total copper, cyanide, mercury, ammonia, dioxin, bis(2-ethylhexyl) phthalate total nitrogen exceeds POTW allocation in Nutrient TMDL
Will numeric limits for Salts be applied?	No	Probably, if salts objectives are exceeded in effluent. Regional Board may make allowances for imported water quality.	Probably, if salts objectives for receiving groundwater are exceeded in effluent	Probably for one or more constituents. Regional Board may make allowances for imported water quality.

[1] See Attachment 2 for definitions of Beneficial Uses

	Rancho Colina			California Men's Colony
	Ocean Discharge	**Discharge to Surface Water**	**Discharge to Land**	**Discharge to Surface Water**
	Existing Ocean Outfall	**Morro Creek**	**Percolation ponds**	**Chorro Creek**
Would SNMP requirement apply?	Yes – if permit to recycle water is also requested	Yes	Yes	Yes. There may be opportunities for regional partners. SNMP process may be more complex.
Environmental Sensitivity	TBD	Morro Creek is designated Critical Habitat for federally listed south Central California coast DPS steelhead and California red-legged frog. Lower portion of creek is habitat for federally listed tidewater goby.	TBD	Chorro Creek is designated Critical Habitat for federally listed south Central California coast DPS steelhead and California red-legged frog. Chorro Creek discharges into a national "Estuary of Significance", and two State Marine Protected Areas. Estuary supports dozens of listed species. Oyster farming occurs in Morro Bay.

2. Current Regulatory Implications of Discharge Scenarios

The discharge options associated with the Rancho Colina and CMC sites involve different receiving waters as shown in Table 2. Three potential methods for disposal of effluent were considered for the Rancho Colina site: use of the existing ocean outfall, discharge into Morro Creek, and discharge to percolation ponds. Only one method of disposal was considered for the CMC site: expansion of the existing CMC treatment facility and outfall with discharge to Chorro Creek. This would provide the most direct benefit to the City of Morro Bay via augmentation of streamflow in Chorro Creek and recharge of City groundwater.

Table 2. Discharge Scenarios for the Morro Bay WRF and Associated Receiving Waters

Site/ Treatment Plant	Method of Discharge	Receiving Water
Rancho Colina/ New Reclamation Ready Treatment Plant	Existing Ocean Outfall	Estero Bay (Pacific Ocean)
	Outfall into Creek	Morro Creek
	Percolation Ponds	Morro Valley Groundwater Basin
CMC/ Expansion and upgrade of existing Treatment Plant	Outfall into Creek	Chorro Creek

PERMIT CATEGORIES

For regulatory purposes, discharges in California can generally be divided into the discharge of pollutants to surface waters (i.e., rivers, creeks, streams, lakes, ocean, etc.) or discharges to land (discharges that affect groundwater). Discharges to surface waters are regulated by permits issued under the National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act. Discharges to land are permitted through Waste Discharge Requirements (WDR) under the Porter-Cologne Act. NPDES permits require approval by the USEPA; WDRs do not require USEPA approval. In addition, for NPDES permits, serious violations pertaining to effluent limitation exceedances and failure to submit reports are subject to Mandatory Minimum Penalties (MMPs, e.g., $3000/violation) as described in the California Water Code Section 13385. Permit violations for WDRs are not subject to MMPs.

Details regarding the process and information required to apply for an NPDES permit or a WDR are provided in **Attachment 1**. NPDES permits are generally reissued every five years. WDRs have no predetermined renewal interval, and sometimes remain unaltered for long periods. Discharge through the existing ocean outfall or to either Morro Creek or Chorro Creek would require an NPDES permit. Discharge to percolation ponds would require a WDR.

In addition to the current 2008 Morro Bay-Cayucos WWTP Permit and the August 2013 Report of Waste Discharge (ROWD) for the Morro Bay-Cayucos WWTP, three recent permits from Region 3 were consulted, owing to their potential to shed light on permitting practices in Region 3:

- 2012 California Men's Colony Wastewater Treatment Plant, (ORDER No. R3-2012-0027/NPDES No. CA0047856), (2012 CMC Permit)
- 2011 Waste Discharge/Recycled Water Requirements for the Los Osos Water Recycling Facility (Order No. R3-2011-0001), (Los Osos WDR)
- 2012 Waste Discharge Requirements for the Tres Pinos Water District Wastewater Treatment Facility (Order No. R3-2012-0015), (Tres Pinos WDR)[2].

BENEFICIAL USES AND APPLICABLE WATER QUALITY OBJECTIVES

The water quality standards that apply to the receiving waters are described in several regulatory documents:

- Region 3, Central Coast Basin Plan (Basin Plan)
- Water Quality Control Plan for Ocean Waters of California (Ocean Plan)
- Drinking water standards in Title 22 of the California Code of Regulations (Title 22)
- California Toxics Rule (CTR)
- Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan)
- TMDLs that set targets and allocations for Chorro Creek:

The beneficial uses assigned to the four receiving waters and the applicable water quality objectives are outlined in **Attachment 2.** The sources of applicable water quality objectives for the discharge scenarios are compared in Table 3.

Table 3. Sources of Applicable Water Quality Objectives for Discharge Scenarios

	Ocean	Percolation Ponds	Morro Creek	Chorro Creek
Source of Applicable Water Quality Objectives	Basin Plan Ocean Plan Thermal Plan	Basin Plan Title 22	Basin Plan Title 22 CTR	Basin Plan Title 22 CTR 3 TMDLs

Numeric objectives are discussed in this section for a subset of constituents (bacteria, salts, and nutrients) which may have implications for treatment processes (e.g., nitrogen removal, disinfection, desalination), and thus create potentially significant contrast between the discharge options. In the fourth section of the memorandum (Effluent Quality Evaluation), applicable numeric water quality objectives are compared to effluent data (based on current data or projected data for the upgraded plant) to determine if an effluent limit would be needed under each discharge scenario. It should be noted that an exceedance of a water quality objective does not necessarily correspond to an exceedance of an effluent limit. This especially true for the ocean discharge

[2] While the Tres Pinos facility is located in San Benito County, it is indicative of current WDR permitting policy for the Central Coast Region.

scenario where effluent limits are determined by applying a dilution factor of 133 to the water quality objective.

TMDLs

Three TMDLs have been adopted that contain targets for Chorro Creek, which is a 303(d) listed impaired water body according to the federal Clean Water Act:

- 2005 TMDL for Nutrients and Dissolved Oxygen in Chorro Creek (Nutrient TMDL)
- 2003 TMDL for Pathogens for Morro Bay and Chorro and Los Osos Creeks (Pathogen TMDL)
- 2003 TMDL for Sediment including Chorro Creek, Los Osos Creek and the Morro Bay Estuary (Sediment TMDL)

The Nutrient TMDL has targets for nitrogen and phosphorus species, and allocations for the CMC WWTP, that have implications for the scenario in which the regional treatment facility discharges to Chorro Creek. These implications are explained below in the Nutrients subsection. The Nutrient TMDL also established targets for TDS and Sodium (Na), however they are equivalent to the Basin Plan objectives for Chorro Creek for TDS and Na, and are thus not particularly significant. The Pathogen TMDL resulted in total coliform targets for Chorro Creek. However, the numeric effluent limits for total coliform in the 2012 CMC Permit were stricter than the Pathogen TMDL targets and are consistent with Title 22 bacteria objectives for urban irrigation. The Sediment TMDL assigned numeric targets for turbidity (expressed as NTU) for Chorro Creek, and allocations for sediment flux (expressed as annual loads) to classes of erosional features (including stream banks) and land uses in the Morro Bay watershed. This TMDL did not affect the 2012 CMC Permit. It is possible that an increase in surface flow in Chorro Creek (e.g. owing to additional discharge from the City) could affect erosion of the stream banks; the combined discharge would approximately double the volume of water discharged to Chorro Creek.

No TMDLs have been adopted for Morro Creek or for Estero Bay, and there are no currently unaddressed water quality impairments for Morro Creek, Chorro Creek, Morro Bay, or Estero Bay on the 303(d) list.

Objectives that May Influence Treatment Options

Discharge options that involve surface water or groundwater may result in effluent limits for bacteria, nutrients (N and P), and salts that have significant implication for treatment options. The potential issues for each constituent group are summarized below.

Pathogens

Discharge to either Morro Creek or Chorro Creek will result in numeric effluent limits for pathogen indicators (i.e., bacteria). The bacteria limits in the 2012 CMC Permit were carried over from a previous permit (Order No. R3-2006-0032)[3] and are as follows:

[3] The 2006 CMC Permit is not posted on the Region 3 website along with other 2006 Orders and Resolutions. Consequently, it was not possible at this time to review the reasoning behind the apparent assignment of the Title 22 bacteria standards for urban irrigation as numeric effluent limits *for discharges to the creek* (as opposed to requirements for recycled water only).

- Total coliform: 2.2 MPN/100 mL (7-day median)
- No more than one sample shall exceed 23 MPN/100 mL in any 30-day period;
- No sample shall exceed 240 MPN/100 mL.

The 7-day median total coliform effluent limit in the 2012 CMC Permit is much stricter than the Ocean Plan limits for total coliform.[4] They are equivalent to the Title 22 standards for recycled water for urban irrigation; the 7-day median limit for total coliform bacteria is also equivalent to the Basin Plan MUN objective for groundwater.

It is not clear whether the Regional Board would apply all of the Title 22 standards for recycled water to creek discharges by combined WWTP or the Morro Bay WRF, as they did in the 2012 CMC WWTP, or whether only the 7-day median for total coliform (for the groundwater MUN use) would be applied.

Salts

If the regional CMC facility continues to discharge to Chorro Creek, it is likely that the Regional Board will assign numeric effluent limits for one or more salt constituents. The Basin Plan establishes water quality objectives for salts for Chorro Creek as follows:

Basin Plan Objectives for Surface Water in Chorro Creek (annual means)

- TDS 500 mg/L (also a target in the Chorro Creek Nutrient TMDL)
- Cl 50 mg/L
- SO4 50 mg/L
- B 0.2 mg/L
- Na 50 mg/L (also a target in the Chorro Creek Nutrient TMDL)

In the 2012 CMC Permit, the Regional Board assigned a numeric effluent limit for SO4 (125 mg/L; 1,251 lbs/day) that exceeded the Basin Plan objective for Chorro Creek. The sulfate limit was intended to account for high background salt concentrations and salt loading from the water supply in facility influent, and was carried over from the previous 2006 permit.[5]

Although percolation ponds in the Chorro Valley Basin are not currently a discharge scenario under consideration, the groundwater objectives for salts and nitrogen for Chorro Valley Basin may inform Regional Board expectations for groundwater quality in the Morro Valley Basin, and are as follows:

Chorro Valley Groundwater Basin Objectives for Salts

- TDS 1,000 mg/L

[4] Ocean Plan total coliform limits are 1,000/100 mL (30-day geomeans) (REC1); 10,000/100 mL (single sample maximum) (REC2)

[5] The sulfate effluent limit is justified in the Fact Sheet (Attachment F) of the 2012 CMC Permit as follows: "*Typically, waste discharge requirements incorporate the Basin Plan's specific, numeric WQOs as effluent limitations. Although convention generally sets effluent limitations at the Basin Plan's WQOs, the previous Order does not use Table 3-7 Basin Plan numeric WQOs as effluent limitations. Instead, the existing effluent limitation (for sulfate) is greater than WQOs in Basin Plan Table 3-7 to account for high background salt concentrations and uncontrollable salt loading from the water supply in Facility influent. Consistent with the previous Order, this Order shall establish a limitation for sulfate that is characteristic of the natural receiving water*."

- Cl 250 mg/L
- SO4 100 mg/L
- Na 50 mg/L
- B 0.2 mg/L

Although the Basin Plan does not currently include groundwater objectives for salts specific to Morro Valley Basin, the Regional Board may establish them in the future. The June 8, 2011, edition of the Basin Plan includes a priority list for future Regional Board tasks, established in 1988 (referred to as the "Triennial Review List"). "Establishment of Morro Valley Basin ground water objectives" appears as item 40 out of 49 tasks. The evaluation of current groundwater quality in Morro Valley Basin with respect to salts and nutrients, and the quantification of the effects on groundwater of future discharges to land or surface water in the Morro Valley Basin (including application of reclaimed water), would be elements of a Salt & Nutrient Management Plan[6] that the Regional Board is likely to require if a permit is sought to apply reclaimed water to land overlying the Morro Valley Basin.

There is recent precedent for assignment of numeric effluent limits for salts for percolation ponds in Region 3. The 2012 Tres Pinos WDR for discharge to percolation ponds included numeric effluent limits for three salt constituents:

- TDS 1,200 mg/L
- Na 200 mg/L
- Cl 200 mg/L

The ponds discharge to the San Juan subbasin of the Gilroy-Hollister Basin. This subbasin is not assigned specific salt objectives in the Basin Plan.

The 2011 Los Osos WDR, which also addresses discharge to groundwater (via leach fields and recycled water) does not contain numeric effluent limits for salts, and the Los Osos Valley groundwater basin is not assigned salt objectives in the Basin Plan. However, based on information in the Los Osos WDR regarding data through 2010, sea water intrusion is an issue in the lower aquifer into which the leach fields discharge, so this permit may not provide a good analogy for a scenario in which a new Morro Bay WRF would discharge to percolation ponds in the Morro Valley Basin.

Nutrients

Discharge to either creek, and to percolation ponds, will result in effluent limits for one or more nitrogen species. Discharge to Chorro Creek may result in effluent limits for orthophosphorus. Discharge to the ocean outfall will not result in effluent limits for nutrients. Additional background on applicable objectives and recent Region 3 permit limits for nutrients is provided below.

Discharge to Chorro Creek. If the existing CMC facility is expanded and discharge to Chorro Creek is increased, it is likely that the Regional Board will assign numeric effluent limits for total nitrogen (TN) and "orthophosphorus."[7] The impetus for the limits would be the targets in the

[6] Salt and Nutrient Management Plans are discussed later in the document.

[7] Based on the 2012 CMC Permit Fact Sheet, the Regional Board is interpreting "orthophosphorus" to be "phosphate" + "orthophosphate".

Chorro Creek Nutrient TMDL.[8] The TMDL targets are compared to the corresponding TMDL allocations for the CMC WWTP and numeric effluent limits in the 2012 CMC Permit in Table 4.

Table 4. Comparison of Nutrient TMDL Targets for Nitrate and Orthophosphorus with Effluent Limits in the 2012 CMC Permit.

	TMDL In-Stream Target	CMC WWTP Allocation in the TMDL	CMC Permit Limit
N	Nitrate-N: 1.5 mg/L Determined as a rolling median May-Sept. measured in half-mile reach upstream from South Bay Boulevard crossing.	"The monthly maximum nitrate-N concentration of effluent shall not exceed 10 mg/L-N."	Total Nitrogen: 10 mg/L (monthly maximum) 100 lbs/day (based on 1.2 MGD design flow) No ammonia limit
P	"Orthophosphorus- P": 0.4 mg/L Determined as a rolling median May-Sept. measured in half-mile reach upstream from South Bay Boulevard crossing	"Median orthophosphorus-P concentration of effluent from May through September shall not exceed current levels, as measured by a comparison to effluent concentration from 2004 and 2005."	Orthosphosphate-P: A cap based on effluent concentration 2004-2005. The Fact Sheet of the 2012 CMC Permit identifies median May-Sept. orthophosphorus as 2.4 mg P/L.

It is possible that increased loading of TN and phosphate to Chorro Creek due to the additional flow from a regional facility may result in a change in effluent limits. The justification for assigning generous limits for TN and orthophosphorus in the 2012 CMC permit appeared to hinge on natural attenuation of nitrate and phosphate downstream from the CMC outfall. It is worth noting that the Regional Board carried over the TN limit from the 2006 CMC Permit with the expectation that treatment upgrades at the CMC WWTP would achieve single-digit nitrate concentrations in the future.[9]

Based on limited data for total ammonia, the concentration of TN in the current effluent from the Morro Bay/Cayucos WWTP is over 20 mg N/L (at least two times higher in terms of nitrogen content than the effluent limit for TN in the 2012 CMC Permit). However, no nutrient removal is performed at the Morro Bay/Cayucos WWTP whereas the CMC facility does perform nitrogen

[8] The Regional Board arrived at the nitrate and orthophosphorus allocations for the CMC WWTP by determining that although the CMC discharge elevated nutrient concentrations in the stream above the TMDL targets below the outfall, there was sufficient in-stream attenuation below the outfall to achieve the TMDL targets at the compliance point for the TMDL further downstream (the half-mile reach upstream from South Bay Boulevard). The determination was made by comparing stream concentration data from monitoring sites, and not by evaluating assimilative capacity directly (for example by using a water quality model).

[9] "*Note that achieving the nitrate-N and orthophosphorus-P allocations at the point of discharge will result in achieving the TMDLs for these constituents in the lower reaches of Chorro Creek. Also note that although the nitrate-N allocation is 10 mg/L-N, the technology of the plant upgrade for the CMC facility is expected to result in single digit nitrate-N concentration in the discharge. It is also anticipated that the plant upgrade will result in reduced effluent orthophosphorus-P concentration*." (TMDL Project Report, p. 35)

removal. The daily maximum load of TN allowed in the CMC 2012 Permit was based on a final effluent limitation of 10 mg N/L and a design flow of 1.2 MGD. Discharge to Chorro Creek is expected to require expansion of nitrogen removal (nitrification/denitrification) at the CMC facility to treat additional flow from the City. By similar reasoning, the Regional Board may consider additional significant orthophosphorus loading to Chorro Creek to be inconsistent with the goals for controlling benthic algal cover and dissolved oxygen concentrations in the lower reaches of Chorro Creek.

Discharge to Morro Creek. If the Morro Bay WRF discharges to Morro Creek, the surface water objectives that would currently govern expectations for nutrient concentrations would be the narrative objective for biostimulatory substances, and the following drinking water objectives for nitrate and nitrite:

- Nitrate (as NO3): 45 mg/L (Basin Plan MUN and Title 22)
- Nitrate + Nitrite (as N): 10 mg/L (Title 22)
- Nitrite (as N): 1 mg/L (Title 22)

Discharge to Groundwater. If the Morro Bay WRF discharges to percolation ponds in the Morro Valley Basin, the MUN objective for nitrate (10 mg/L nitrate-N) would likely be the governing objective. However, the neighboring Chorro Valley groundwater basin has an objective of 5 mg/L TN. The available recent permits for discharge to groundwater in Region 3 resulted in different types of numeric effluent limits for nitrogen species, as follows:

Los Osos WDR:

- Total Nitrogen: 10 mg N/L (daily maximum), 7 mg N/L (30-day average)

Tres Pinos WDR (final limits, by 2016):

- Nitrate: 5 mg/L as N (30-d ave.)
- Ammonia: 5 mg/L as N (30-d ave.)

As was noted above in the case of salts, the percolation ponds regulated by the Tres Pinos WDR discharge to a groundwater basin (the San Juan subbasin) that has not been assigned specific nitrate or TN objectives in the Basin Plan. The Los Osos Valley groundwater basin is identified in the Basin Plan, but not assigned nitrate or TN objectives.

OTHER CURRENT REGULATORY CONSIDERATIONS

Salt and Nutrient Management Plans

In November 2008 the SWRCB adopted the Statewide Recycled Water Policy, which requires the development of regional or sub-regional salt and nutrient management plans (SNMPs) for groundwater basins in California by 2014 (with the potential for a two year extension if substantial progress towards development of a plan is being made). SNMPs will be adopted by Regional Boards as Basin Plan amendments. According to the state policy, SNMPs must include the following components:

- Basin/sub-basin wide monitoring plan
    - Assess groundwater quality, preferably by sampling existing wells
    - Focus on groundwater near large recycling and recharge projects and near water supply wells

    - Target where appropriate ground and surface water in areas of connectivity
- Annual monitoring for contaminants of emerging concern (CECs)
- Water recycling and stormwater recharge/use goals and objectives
- Salt and nutrient source identification, loading estimates, assimilative capacity, and fate and transport
- Implementation measures to manage salt and nutrient loading in the [groundwater] basin on a sustainable basis
- Antidegradation analysis

In Region 3, this SNMP requirement is being implemented by inclusion of provisions in WDRs or NDPES permits for facilities which use reclaimed water for irrigation. In the 2012 CMC Permit, *Section (a) Salt and Nutrient Management* (in the Best Management Practices and Pollution Minimization Program) describes in great detail required elements of a salt and nutrient management program specific to the facility, and then provides the option to alternatively satisfy the detailed requirements through participation in a regional salt and nutrient management plan.

Required elements of Central Coast SNMPs are detailed in a February 2014 document available on the Region 3 website.[10] Based on a September 13, 2013, Salt and Nutrient Management Plan Update (powerpoint presentation by the Region 3 Staff for the Central Coast Forum), a regional SNMP effort was tentatively underway at the time for the Los Osos Valley, but not the Chorro Valley.

Because the Morro Bay WRF will involve a significant reclaimed water component, a requirement to either perform a facility-specific salt and nutrient management program or to participate in a regional salt and nutrient management plan is a guaranteed element of the eventual permit regardless of the site of the wet weather discharge. However, it is possible that by the time the Morro Bay WRF or the expanded CMC facility is built, a regional SNMP might be underway in the Chorro Valley and that some economy of effort could be achieved by the City of Morro Bay participating in the regional planning effort with partner agencies.

Environmental Sensitivity of Receiving Waters

Discharges to Chorro Creek, in particular, may be subject to regulations associated with presence of sensitive habitat and species. Morro Bay is one of only 28 estuaries nationwide that have been designated as "estuaries of national significance" and supports more than two dozen endangered species. Chorro Creek terminates in the Morro Bay Estuary which is afforded additional protection by virtue of the Morro Bay State Marine Recreational Management Area and the Morro Bay State Marine Reserve. Within these protected areas fishing and take of all living marine resources is prohibited except that in a northern portion of the Bay, recreational fishing and aquaculture of oysters, pursuant to a valid State water bottom lease and permit, is permitted. Oysters are commercially farmed in Morro Bay by the Morro Bay Oyster Company and the Grassy Bar Oyster Company. Both Morro and Chorro Creeks are designated Critical Habitat for federally listed South Central California Coast DPS steelhead and California red-legged frog. Lower portions of both creeks are habitat for federally listed tidewater goby. Downstream from the CMC WWTP

[10] Informational Document: Salt and Nutrient Management Plan Development. February 2014. Available at http://www.waterboards.ca.gov/centralcoast/water_issues/programs/nutrient_mgmt/index.shtml.

discharge, approximately two miles of Chorro Creek flows through the Chorro Creek Ecological Reserve.

Regionalization Issues

If discharge to Chorro Creek occurs through establishment of a new regional facility, there will be additional complexity related to the formation of a joint powers authority (JPA) or similar governing body able to receive influent from more than one sanitary district with a single NPDES permit issued for a regional facility. This added layer of regulatory complexity would be avoided if discharge occurs to one of the other receiving waters.

3. Effluent Quality Evaluation

Effluent data from semi-annual sampling reports and conductivity/TDS monitoring data for the current Morro Bay-Cayucos WWTP were reviewed as an initial assessment of potential water quality issues under the four discharge scenarios. This data did not include all constituents of potential concern because not all monitored constituents were found in this report as described below. Because effluent quality is expected to improve with the proposed upgrades, it is anticipated that a subset of the constituents identified in this analysis would require effluent limits. Therefore, this analysis provides a preliminary comparison of constituents that could require effluent limits under the different discharge scenarios.

In accordance with the method in the SIP for determining "reasonable potential" (Reasonable Potential Analysis, or RPA) for inland surface waters, the maximum detected concentrations for constituents in effluent were compared with the lowest water quality criteria from the applicable suite of objectives for the creek and percolation pond scenarios. RPA for the ocean outfall scenario followed the procedure identified in the Ocean Plan. Effluent was compared with the suites of objectives pertaining to the following scenarios:

1. Discharge to fresh surface water (using objectives from CTR, Basin Plan, Title 22)
2. Discharge to fresh surface water using potential future CTR objectives (based on the revised USEPA criteria described above)
3. Discharge to ocean (using objectives from the Ocean Plan and Basin Plan)
4. Discharge to land (using Basin Plan groundwater objectives)

The effluent dataset included semi-annual sampling data from January 2010 through January 2014 and daily conductivity/TDS monitoring from July 2012 through July 2013. The constituents reported included organics, inorganics (metals), toxicity, nitrate-N, ammonia-N, coliform, pH, and TDS. Inorganics, nitrate and toxicity were generally monitored semi-annually (9 data points each), while organics were monitored annually (4 data points each). Ammonia is sampled monthly and total coliform is sampled 5 days per week. The maximum concentrations for these constituents were obtained from the August 2013 ROWD. Data for salts were from six 24-hour composite samples taken between February 8, 2012 and February 14, 2012 (*2012 Recycled Water Feasibility Study*, Dudek, Draft March 9, 2012). The data reports evaluated did not provide results for total nitrogen and dozens of Title 22 and CTR constituents. Several inorganics applicable to Basin Plan objectives for AGR, WARM/COLD, SPWN were also not screened. A table of these unscreened constituents is provided in **Attachment 3**. Constituents for which there are applicable water quality objectives, but which were not detected in any of the effluent data screened, are also provided in **Attachment 3**.

DISCHARGE TO SURFACE WATER

Both Chorro Creek and Morro Creek are assigned the MUN use, so Title 22 MCLs were included in the suite of objectives for RPA. Concentrations of ten constituents in effluent exceeded the lowest applicable objective. Hardness was assumed to be 150 mg/L. Ammonia-N exceeds the total nitrogen limit in the 2012 CMC Permit (10 mg/L total nitrogen) but expansion of nitrogen removal processes at CMC is expected as part of the regionalization effort. Detailed results are provided in **Attachment 3**.

Updated human health CTR criteria were proposed for 90 constituents in 2014. Only three of the updated constituents that are monitored in effluent were detected (cyanide, bis(2-ethylhexyl) phthalate, toluene), concentrations for two of them exceeded the proposed updated criterion (cyanide, bis(2-ethylhexyl) phthalate). However, concentrations of these two constituents exceed the *current* CTR criteria and it is not likely that these concentrations would be lowered as a result of the planned upgrades to the treatment process. Therefore, there would be no difference in reasonable potential in the case of these two constituents should the 2014 proposed criteria be adopted.

DISCHARGE TO OCEAN

The Ocean Plan RPA is very different from the RPA for inland surface waters. A tool called RPCalc2.0 is used on each individual constituent's dataset, with a dilution of 133 for this discharge and ambient concentrations from the Ocean Plan. Three endpoints are possible: 1=reasonable potential, 2=no reasonable potential, 3=inconclusive, continue collecting data. Three constituents had reasonable potential with Ocean Plan objectives, while 11 had an inconclusive result, and 8 had a result of "no reasonable potential." Detailed results are provided in **Attachment 3**.

DISCHARGE TO LAND

Concentrations of seven constituents in effluent exceeded the lowest applicable objective, including four salts (boron, chloride, sodium, and TDS) and ammonia-N at current concentrations. However, ammonia concentrations would be reduced as by the projected plant upgrade or as a result of expansion of the CMC facility. Detailed results are provided in **Attachment 3**.

SUMMARY

Table 5 summarizes the criteria exceeded by effluent concentrations for detected constituents (or showing reasonable potential under the Ocean Plan) under the various discharge scenarios. In addition, although there was no data for total nitrogen in the dataset screened, ammonia-N exceeds the basin plan objective for groundwater for Chorro Valley Basin (5 mg/L total nitrogen), and the total nitrogen limit in the 2012 CMC Permit (10 mg/L total nitrogen). In addition, the maximum 7-day median total coliform value in the screened data set (50 MPN/mL) exceeds the 7-day median total coliform effluent limit MUN limit assigned to groundwater in Region 3 (2.2 MPN/L), which was assigned to the creek discharge in the 2012 CMC Permit. However, ammonia, total nitrogen, and coliform bacteria concentrations are expected to be reduced by the projected plant upgrade or as a result of expansion of the CMC facility.

While a similar set of effluent limits would be required for an ocean discharge or surface water discharge, the effluent limits for the ocean discharge would be much higher due to the dilution credit of 133:1.

Table 5. Summary of Constituents Likely to Have Effluent Limits for Discharge Scenarios

			Freshwater			Ocean		Groundwater
Constituent	**Units**	**Detected Effluent Maximum [a]**	**Basin Plan Objectives**	**CTR**	**Title 22 MCLs**	**Ocean Plan RPA**	**Basin Plan Objectives**	**Basin Plan Objectives & Title 22 MCLs**
Constituents with concentrations likely to change based on the plant design/upgrades:								
Ammonia (as N)	mg/L	ND[b]						
Nitrogen	mg/L	10[b]						X
Total Coliform	MPN/ 100mL	2.2[b]						
Constituents with concentrations that may incidentally change due to upgrades:								
Antimony	µg/L	11			X			X
Cadmium, Total	µg/L	0.64	[c]				X	
Copper, Total	µg/L	22	[c]	X		X	X	
Cyanide	µg/L	94		X		X		
Mercury	µg/L	0.088		X				
Nickel, Total	µg/L	4.3					X (salts)	
Zinc, Total	µg/L	71	[c]				X	
2,3,7,8-TCDD (dioxin)	µg/L	1.8E-07		X		X		
Bis(2-ethylhexyl) Phthalate	µg/L	8.2	X	X	X			X
pH	SU	7.3-7.9	[d]					
Constituents with concentrations that are not expected to change due to plant upgrades:								
Boron	mg/L	0.4[e]	X					X
Chloride	mg/L	369[e]	X		X			X
Sodium	mg/L	223[e]	X					X
TDS	mg/L	1,077[f]	X		X			X
Total				**10**		**6**		**7**

[a] Based on data in annual and semi-annual reports unless noted otherwise

[b] Adjusted based on anticipated future effluent quality from new WRF (Tertiary-2.2 for unrestricted reuse per Title 22 Regulations). Projected concentrations of ammonia and total coliform do not exceed the water quality objectives but may receive effluent limits nevertheless.

[c] Basin Plan objectives for "soft" water (hardness < 100 mg/L) would trigger exceedances with the maximum effluent concentration.

[d] pH levels are currently very stable, however this could change with the treatment plant upgrade.

[e] Data are from six 24-hour composite samples taken between February 8, 2012 and February 14, 2012 (*2012 Recycled Water Feasibility Study*, Dudek, Draft March 9, 2012

[f] Data from daily conductivity/TDS monitoring were provided from July 2012 through July 2013.

4. Future Considerations

Several regulatory actions at either the state or federal level are anticipated in the near future that may affect permit requirements or the regulatory burden associated with some of the discharge scenarios. The actions are briefly described below.

Biological Integrity Assessment Implementation Plan

Starting in 2010, the SWRCB has been engaged in technical and stakeholder processes to develop a consistent methodology for using bioassessment data (indices of biological integrity, or IBIs) for impairment listings and identification of controllable pollutants causing biological community impairment that can be addressed by TMDLs, waste discharge permits, and other regulations. The SWRCB will adopt standardized metrics and monitoring protocols, and adopt statewide *guidance* for Regional Boards to interpret the biological data for 303(d) listing purposes, TMDL development and permit writing.[11] The SWRCB is beginning by addressing benthic invertebrates in streams, but intends to consider other types of community indices, such as for microalgae.

The SWRCB has already proposed: (1) the metric that will be used to interpret bioassessment data for stream benthic invertebrates (the California Stream Condition Index, or CSCI), (2) a reference stream data set and methods for defining reference conditions, (3) a stressor-identification framework (Causal Assessment), and (4) at least one tool for causal assessment (CADDIS) proposed for use in assigning responsibility for benthic community impairment to one or more pollutants (such as sediment or nutrients) or non-chemical stressors (such as hydromodification). The framework for implementation is still being developed (for example, addressing controversial issues such as expectations for modified stream channels).

The implementation of the CSCI in the regulatory setting is controversial and has implications for dischargers to wadeable streams. The "stressor ID" process has been demonstrated in case studies and at least one TMDL in Region 4 (2013 Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impairments) to provide a rationale for stringent nutrient regulation. In the case of the Malibu TMDL, benthic invertebrate index data and Causal Assessment were used as a basis for revising POTW nutrient allocations significantly downward from those promulgated in a previous (2003) nutrient TMDL (new allocations were 1.0 mg /L TN and 0.1 mg /L TP during summer months).

Proposed Policy for Nutrients for Inland Surface Waters

The State Water Board is developing a nutrient policy for inland surface waters. The State Water Board intends to develop narrative nutrient objectives, with numeric guidance to translate the narrative objectives. This numeric guidance could include the "Nutrient Numeric Endpoint" (NNE) framework which establishes numeric endpoints based on the response of a water body to nutrient overenrichment (e.g. algal biomass, dissolved oxygen, etc.).

[11] The currently applicable background information, technical documents, and advisory group information is available at http://www.waterboards.ca.gov/plans_policies/biological_objective.shtml.

Disjunct but overlapping processes have been underway since 2006 to evaluate approaches for regulating nutrient discharges to four different classes of inland water bodies:

- Streams and Lakes
- Coastal estuaries
- San Francisco Estuary (SFE, includes Suisun Bay)
- Sacramento-San Joaquin Delta

Much of the technical foundation for establishment of NNEs for wadeable streams had been developed with SWRCB funding and oversight, but without stakeholder involvement, prior to June 2014. The NNE process for inland water bodies (other than those for the SFE and the Delta, which appear to be continuing on separate tracks) was recently "reset", and a formal stakeholder process for NNEs for inland waters (initially to address wadeable streams) began in June 2014.[12] The recent scientific work products produced by SCCWRP (expected for public release in August 2014) indicate that nutrient thresholds for wadeable streams derived using correlational approaches and statewide monitoring databases, if applied as effluent limits, would be unattainable without reverse osmosis. Consequently there is a recognition that alternative regulatory pathways may be important for establishing NPDES permit limits for N and P for POTWs. This possibility is part of the discussion between dischargers and regulators in the newly formed "Inland Water NNE SAG". If offered in a formal framework, the alternative pathway may require dischargers to sponsor site-specific studies of nutrient responses in stream watersheds or conduct expensive modeling of the impacts on beneficial uses of management actions on watershed scales.

Although the current SWRCB website for the Nutrient Policy qualifies the *current process* as one that *excludes* enclosed bays and estuaries, much of the technical work to support NNE development for enclosed estuaries took place already through the California Estuarine Nutrient Numeric Endpoint Project[13] with the involvement of a technical team lead by SCCWRP, a regulatory advisory group ("STRTAG" comprised of SWRCB, Regional Board, USEPA and resource agency staff), and a Coastal Stakeholder Advisory Group (Coastal SAG) that had been meeting since 2009. The Coastal Estuary nutrient process appears to have been put on hold temporarily, and the SWRCB has prioritized development of an NNE policy for wadeable streams. However, as shown in the tentative schedule in Table , estuaries will be addressed in the Nutrient Policy in the next five years.

[12] http://www.waterboards.ca.gov/plans_policies/nutrients.shtml

[13] https://californiaestuarinenneproject.shutterfly.com/

Table 6. Tentative Schedule for Nutrient Policy Development in California.*

Task	Science	Regulatory Amendments	
		Development	Adoption
Conceptual Approach	2014	2015	2017
Wadeable Streams	2014	2015	2017
Lakes	2014-2017	2017	2018
Estuaries and Non-wadeable streams/rivers	2014-2018	2018	2020

*Timelines for the SFE and Delta have not been determined.

The Nutrient Policy creates significant regulatory uncertainty and risk for dischargers to wadeable streams. In addition, owing to potential application of new indicators of nutrient impairment in estuaries (such as new screening values for DO, pH, and benthic macroalgae or new IBIs for benthic infauna or sensitive fish), Morro Bay Estuary might become listed in the future for nutrient-related impairment. In that case, nutrient discharges to Chorro Creek might be reevaluated in the context of their effect on the estuary downstream. Regardless of conditions in the Morro Bay Estuary, the Chorro Creek Nutrient TMDL is subject to a reopening in July 2016. The Regional Board has the discretion to adjust nutrient allocations for POTWs in the TMDL if the targets for benthic algae and dissolved oxygen are unattained at that time. As part of the recent NNE-related technical work described above, SCCWRP is proposing that thresholds for impairment for benthic algal biomass should be much lower than those applied during the early "test runs" of the Benthic Biomass Tool. This may result in Regional Boards establishing lower nutrient targets in TMDLs across the state, and could affect the targets in the Chorro Creek Nutrient TMDL at some point in the future. Finally, although Morro Creek is not currently on the 303(d) list for nutrient-related impairments, its status might change if monitoring data are screened using NNEs recommended by the SWRCB.

State Policy for Toxicity Assessment and Control (Toxicity Policy)

SWRCB Resolution 2005-0019 required revisions to the toxicity provisions in the SIP. In June 2010, the SWRCB released a draft "Policy for Whole Effluent Toxicity Assessment and Control" which included a new methodology for calculating toxicity (Test of Significant Toxicity, or TST) that had been described in a June 2010 document released by USEPA. Following public outreach and comments, peer review, and other steps, the SWRCB issued a revised draft policy in June 2012 that would promulgate new water quality objectives for toxicity for all inland surface waters, enclosed bays, and estuaries of the state. The new objectives would supercede the current toxicity control provisions in the SIP and all toxicity testing provisions in individual Basin Plans. The draft policy includes the following types of provisions:

- Numeric objectives for chronic and acute toxicity
- Chronic and acute toxicity limits
- Reasonable potential analysis and test species screening
- Accelerated monitoring and TRE implementation

The draft policy elicited significant concern from POTWs that discharge to inland waters. A partial list of POTW concerns follows.

Numeric Limits versus Triggers. Currently, most NPDES permits contain narrative objectives for toxicity and numeric triggers that prompt additional sampling and source investigation (e.g., Toxicity Reduction Evaluations, or TRE). This policy would result in numeric limits for toxicity, and dischargers would be considered to be in violation of their permits before there is a chance to determine the cause of the toxicity.

New Statistical Method for Defining Toxicity. The TST is a a new probability-based method for calculating toxicity, based on a null hypothesis that a sample is toxic. Stakeholders have compared the performance of the TST and existing approaches (i.e., calculation of acute toxicity Toxic Units Acute (TUa) and Toxic Units Chronic (TUc)) using WET testing data. They argue that a high false positive error rate is inherent using the TST, and that use of the TST will lead to 303(d) listings for a high percentage of non-toxic waters.

Dischargers with no Dilution. Consideration of the true In-Stream Waste Concentration (IWC) is disallowed during the determination of "pass" or "fail" for dischargers that have no mixing zone or dilution credits.

Immediate Non-Compliance. The draft policy mandates that POTWs without dilution must produce effluent that is free of toxicity at all times. The draft policy includes a maximum daily effluent limitation (MDEL) that would result in an effluent limitation violation as a result of a single sample exceedance.

Higher Costs of Individual Tests. The TST is highly sensitive to the variability of test organism survival in test and control water. Consequently, in order to avoid invalid "fail" results, dischargers may have to pay for an increased number of replicates during routine toxicity tests.

Acute Toxicity Tests. The draft policy creates potential that Permits will contain requirements to conduct acute toxicity tests in addition to (more sensitive) chronic toxicity tests.

Reasonable Potential. The draft policy stipulates that all POTWs with average daily flow above 1 MGD have reasonable potential to cause toxicity *by rule*.

State Policy on Bacteria

The SWRCB is proposing a statewide control program to protect recreational users from the effects of pathogens in California water bodies. The program would be adopted as amendments to both the Inland Surface Water, Enclosed Bays and Estuaries Plan and the California Ocean Plan. Significant proposed program elements may include: new water quality objectives for both fresh and marine waters based on the recently released (2012) USEPA recreational use criteria; a reference beach/natural source exclusion process and high flow exemptions; and revised beach notification requirements.

The USEPA's 2012 recreational water quality criteria recommends use of either enterococci and E. coli for freshwater and only enterococci for marine water. Recommended criteria are provided in Table 7.

Table 7. USEPA 2012 Recommended Recreational Use Standards for Bacteria.*

	Enteroccoci		E. coli	
	30-day geomean	single sample threshold	30-day geomean	single sample threshold
Marine	30-35 cfu/100 mL	110-130 cfu/mL	N/A	N/A
Fresh	30-35 cfu/100 mL	110-130 cfu/mL	100-126 cfu/mL	320-410 cfu/mL

*Ranges apply to different illness rates.

Preliminary considerations related to the Morro Bay WRF discharge options are as follows:

Ocean Outfall

- Receiving water limitations
    - Receiving water limitations for total coliform related to the REC uses might be dropped from future permits. However, the SHELL use objectives in the Ocean Plan (for fecal coliform) may not change as a result of the Bacteria Policy, and could remain as receiving water limitations.
    - Receiving water limitations for enterococcus will likely remain. The 2012 USEPA 30-day geomean standards are similar (30-35 cfu/100 mL, depending on the risk level chose) to those that are already in the Ocean Plan.
    - Following the 2012 USEPA recommendation, enterococcus in 10% of samples within a 30-day period should not exceed 110-130 cfu/100 mL. This objective is slightly more lenient than the current "single sample maximum" for enterococcus of 104/100 mL in the Ocean Plan.
- Estero Bay is not currently listed as impaired for pathogens on the 303(d) list. If that changes in the future, the new Bacteria Policy may provide clarity to the Regional Board regarding whether to apply natural source exclusion in a TMDL.

Discharge to Chorro Creek

- Bacteria limits for the CMC WWTP discharge are equivalent to the Title 22 standards for recycled water, and are not governed by the (more lenient) current REC1 and REC2 Basin Plan objectives for fecal coliform. The Bacteria Policy does not set out to alter the Title 22 standards.
- Chorro Creek and downstream Morro Bay Estuary are already subject to the bacteria targets in the Pathogen TMDL. However, the targets are for fecal coliform. The Bacteria Policy may replace fecal coliform with E. coli as the REC1 and REC2 indicator test organism. Depending on how the SWRCB implements the Bacteria Policy, the Pathogen TMDL might have to be reopened to revise the targets and allocations.

Discharge to Morro Creek

- The new USEPA criteria for E. coli might supercede the Basin Plan objectives for fecal coliform for REC1 and REC2, and might become the governing objectives.

High flow exemptions

- High flow exemptions might shield the Morro Bay WRF from bacteria exceedances during some of the conditions when they expect to need a discharge option.

Percolation Ponds

- The Bacteria Policy would not affect a WDR for percolation ponds.

Proposed Revision of US EPA Human Health Criteria

USEPA recently updated its national recommended water quality criteria for human health for 94 chemical pollutants to reflect newer scientific information and EPA policies, including updated fish consumption rates.[14] The new recommended criteria are significantly lower, in some cases, than the current criteria and higher, in some cases. In order for these new criteria to be implemented in NPDES permits in California, they would need to be incorporated into the California Toxics Rule.

The updated criteria were compared to the current Morro Bay/Cayucos effluent data. Only three of the subject constituents that are monitored in effluent were detected (i.e., cyanide, bis (2-ethylhexyl) phthalate, and cyanide) and concentrations for two of them exceeded the proposed criterion. However, concentrations of the same two constituents exceed the *current* CTR criteria, so there would be no difference in constituents requiring effluent limits should the 2014 proposed criteria be adopted.

Water Rights

There may be regulatory implications associated with a WRF discharge that increases surface flow in either Morro or Chorro Creek with the expectation that effluent can be diverted from the stream later as capacity to reclaim water is developed. Under California Water Code Section 1211, changes in the discharge or use of treated wastewater that result in decreasing the flows in a portion of a watercourse must be approved by the SWRCB Division of Water Rights. Review of a "Change Petition" will be conducted pursuant to Water Code Section 1700 et seq. The petitioner must include sufficient information to demonstrate a reasonable likelihood that the proposed change will not injure any other legal user of water and must include information about measures to protect fish and wildlife. State and federal resource agencies will evaluate the Change Petition regarding impacts of the diversion on state or federally listed species or their habitat. The origin of the water to be diverted (foreign or natural) bears upon the legal analysis of water rights in Change Petitions. It may be advisable for the City to consider whether a water rights decision (i.e., conferring rights to the effluent) is necessary before commencing to discharge to either Creek. The legal analysis of water rights will be more complicated if the facility influent represents a combination of extracted groundwater (i.e., from city wells) and imported water.

Challenges faced by the City of San Luis Obispo (SLO) in implementing their recycled water program serves as an example of this issue. As discussed above, SLO has dedicated a portion of its Water Reclamation Facility effluent to maintain a minimum flow of 2.5 cfs in San Luis Obispo Creek for in-stream beneficial uses, in-stream habitat uses in particular. This minimum dedicated discharge is included in SLO's Water Reuse Project's SWRCB 'Permit for Change in

[14] The supporting technical information for each of the affected constituents is available on an interactive website table at http://water.epa.gov/scitech/swguidance/standards/criteria/current/hhdraft.cfm.

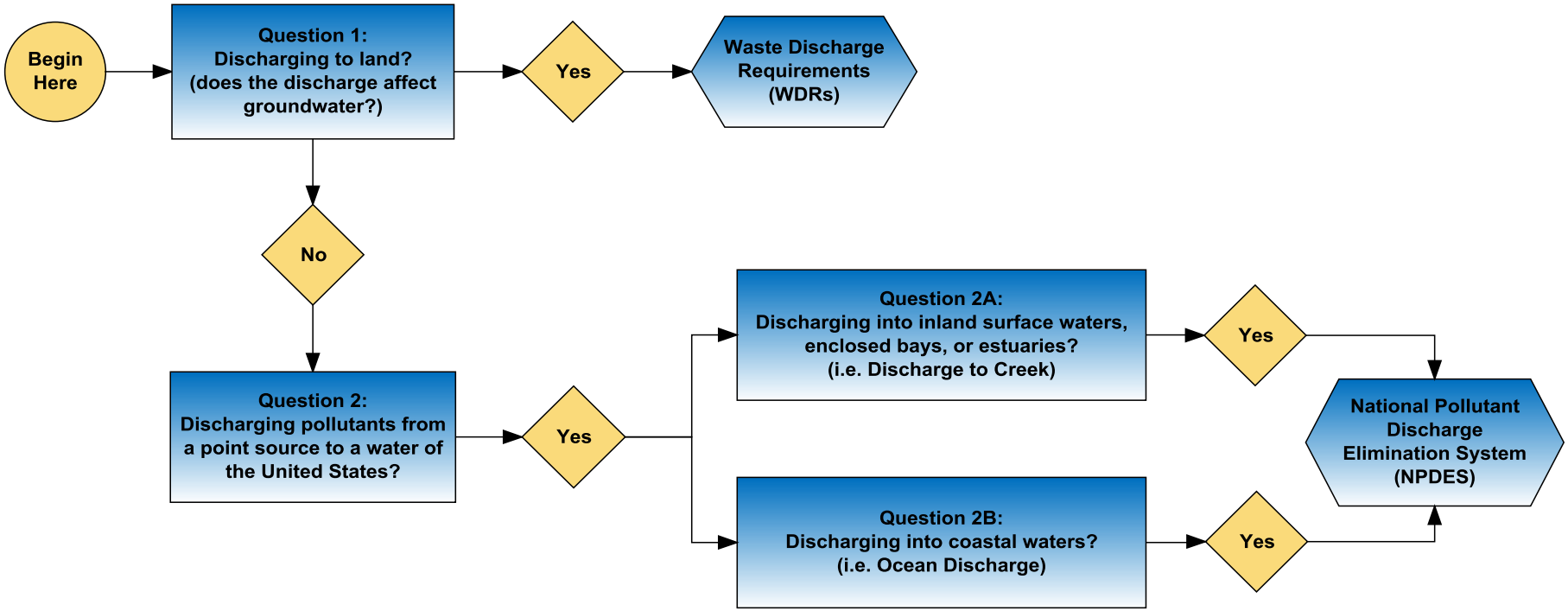
Place and Purpose of Use' and is a required term and condition of the Biological Opinion issued by NOAA Fisheries. SLO and several other agencies, including DFG and NMFS, have completed studies on the creek examining habitat and the abundance of federally threatened anadromous steelhead (*Oncorhynchus mykiss*). A study completed for SLO in 2004 as part of their Water Reuse Project found steelhead in greater abundance than was observed in previous surveys. The results of this study supported an increase in the dedication of a minimum discharge to San Luis Obispo Creek from 1.7 cfs to 2.5 cfs for in-stream beneficial uses, in-stream habitat uses in particular. Consequently, SLO cannot fully utilize the reclaimed water generated as part of the Water Reuse Project.

Attachment 1: Permit Application Procedures

CATEGORIES OF PERMITS

Discharges can be generally divided into the discharge of pollutants to surface waters or other types of discharges (i.e. waste discharges to land or discharges that affect groundwater). Discharges to surface waters are regulated by permits issued under the National Pollutant Discharge Elimination System (NPDES) program while discharges of other types are permitted through Waste Discharge Requirements (WDR) under the Porter-Cologne Act. The figure below illustrates the distinction between the two categories of permits.

"Which Permit Do I Need?"



WASTE DISCHARGE REQUIREMENTS (WDR)

Under the Porter Cologne Act, WDRs are required for types of discharges that affect groundwater, mainly the discharge of waste to land. Dischargers of pollutants must file a Report of Waste Discharge (ROWD) with the Regional Water Board to apply for Waste Discharge Requirements (WDRs) for these types of discharges. The application process for a WDR is discussed in this section.

Required Information

Information that is required during the application process with a submittal of a ROWD for WDRs includes, but is not limited to, the following: [15]

- Facility information: the names, addresses, and telephone numbers of the facility owner(s), facility operator(s), and the owner(s) of the land;
- Reason for filing, such as whether the applicant proposes to change an existing discharge or create a new one;
- Location of the facility and discharge point, including the Assessor's Parcel Number(s) as well as the latitude and longitude;
- Description of the discharge by type and a complete characterization
    - a complete characterization includes, but is not limited to, design and actual flows, water supply, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of disposal methods
- Site map, identifying the location of the facility;
- Planning information such as flood protection, erosion control, surface water control, and spill plan;
- Information and documents pertaining to the California Environmental Quality Act (CEQA), including the CEQA document, Environmental Impact Report, or Negative Declaration, if applicable; and
- Certification by the owner of the facility or the operator of the facility.

Application Process

The entire process for developing and adopting the requirements normally takes about three months.[16] The steps to obtain WDRs are:

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[15] California Regional Water Quality Control Board, Central Coast Region. *Wastewater Permitting* http://www.waterboards.ca.gov/centralcoast/publications_forms/forms/docs/form_200.pdf

[16] State Water Resources Control Board, Central Valley Region. *National Pollutant Discharge Elimination System (NPDES) - Individual Permits Information*. http://www.waterboards.ca.gov/water_issues/programs/npdes/individual_permits.shtml

i. File the Report of Waste Discharge (Form 200) with the necessary supplemental information with the Regional Water Board at least 120 days before beginning to discharge waste.
ii. Regional Water Board staff reviews the application for completeness and may request additional information.
iii. Once the application is complete, Regional Water Board staff determines whether to propose adoption of the WDRs, prohibit the discharge, or waive the WDRs.
iv. If WDRs are proposed, staff prepares draft WDRs and distributes them to persons and public agencies with known interest in the project for a minimum 30 day comment period. Staff may modify the proposed WDRs based upon comments received from the discharger and interested parties.
v. The Regional Board holds a public hearing with at least a 30 day public notification. The Regional Water Board may adopt the proposed WDRs or modify and adopt them at the public hearing by majority vote.

NATIONAL POLLUTANT DISCHARGER ELIMINATION SYSTEM

As authorized by the CWA, the NPDES program protects water quality by regulating point sources that discharge pollutants directly into the waters of the United States, such as a lake, river, or ocean.

An individual NPDES permit is a permit specifically tailored to an individual facility. After receipt of a complete application, the permitting authority develops a permit for a particular facility based on the information contained in the application (e.g., type of activity, nature of discharge, receiving water quality). The permitting authority issues the permit to the facility for an effective period not to exceed five years. The discharger must reapply at least 180 days prior to the expiration date. The Regional Water Boards issue most of the individual permits in California while the State Water Board issues general permits that apply statewide and individual permits on a few occasions.

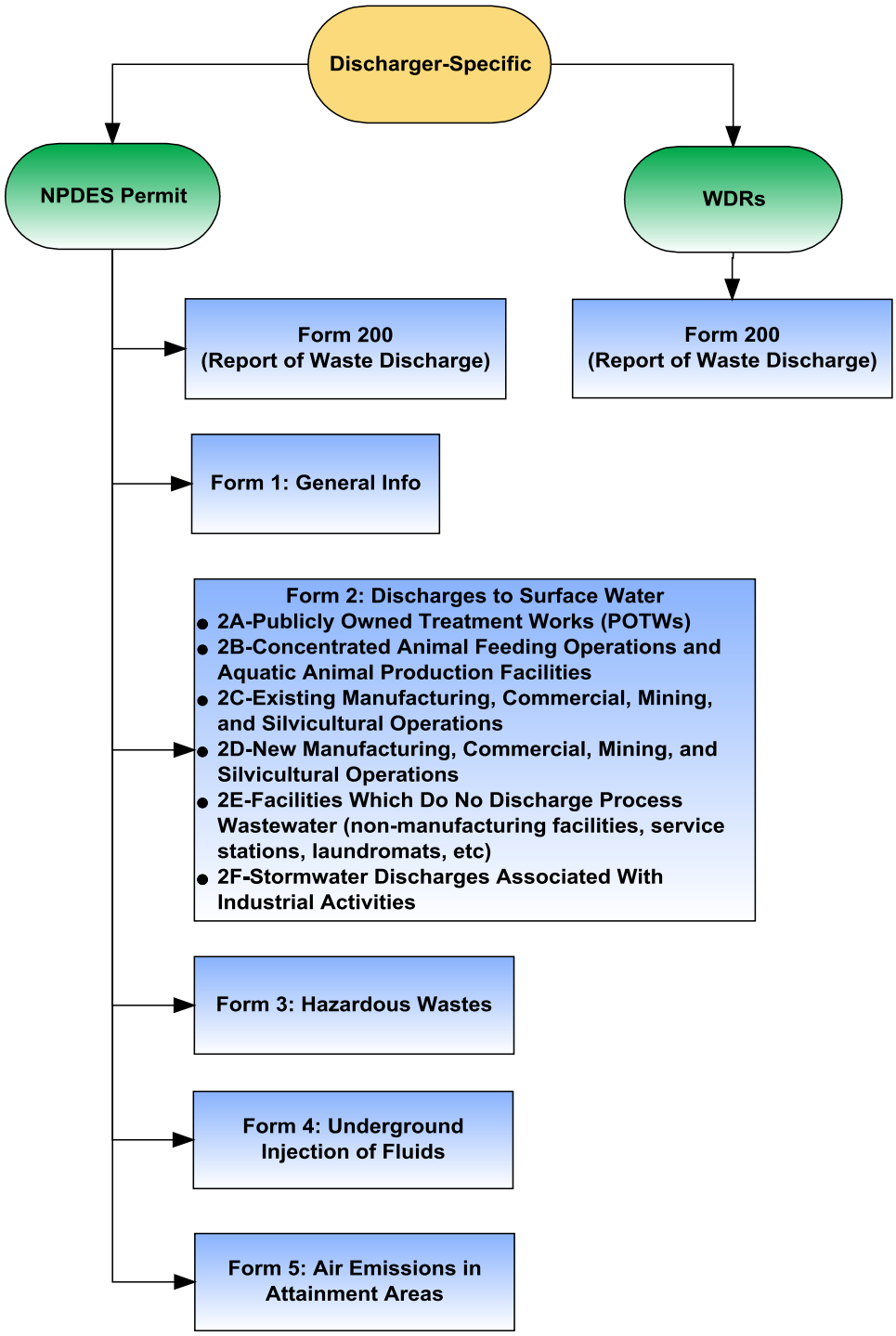
Required Information

Submittal of an ROWD begins the application process for both WDRs and NPDES permits. [17] In addition to submitting the ROWD required information detailed in Section 2.1, a discharger applying for an NPDES permit must provide the following information:

- Site map identifying the surface water into which the discharge is proposed; and
- In addition, the discharger may be required to complete one or more of the following Federal NPDES permit application forms: Form 1, 2A, 2B, 2C, 2D, 2E, 2F, 3, 4, 5, Short Form A, and Standard Form A (see figure below).

[17] California Regional Water Quality Control Board, Central Coast Region. *Wastewater Permitting* http://www.waterboards.ca.gov/centralcoast/publications_forms/forms/docs/form_200.pdf

"Which Forms Do I Need?"[18]



[18] California Regional Water Quality Control Board, Central Valley Region. "Do I Need a Permit-What Forms Do I Need?" *Water Boards*. Last updated 1/02/2013.

APPLICATION PROCESS

The process for application review and permit issuance by the Regional Water Board takes approximately six months, but may take longer depending upon the nature of the discharge. The typical steps to obtain an NPDES permit are:

i. File Form 200 and the appropriate federal NPDES application forms with the Regional Board. Anyone proposing to discharge must file a complete application at least 180 days before beginning the activity.

ii. Regional Board staff reviews the application for completeness and may request additional information

iii. Once the application is determined to be complete, Regional Board staff forwards it to the US Environmental Protection Agency (USEPA) within 15 days. USEPA has 30 days to review the application for completeness and to request additional information from the discharger. After the request for additional information is met, USEPA has 30 days to forward comments to the Regional Board.

iv. Regional Board staff determines if they should issue the NPDES permit or prohibit the discharge. If a permit should be issued, Regional Board staff prepares a proposed permit and forwards a copy to USEPA for review.

v. USEPA review the application and has 30 days to object or submit comments to the Regional Board. USEPA may request an additional 60 days to review the proposed permit.

vi. Following USEPA's review, Regional Board staff prepares a "Notice of Public Hearing" and mails it to the discharger with instructions for circulation. Regional Board staff also mails the public notice and proposed permit to persons and public agencies with known interest in the project. Regional Board staff may modify the proposed permit prior to the public hearing based on comments received from the discharger and interested parties.

vii. The discharger must publish the notice for one day and submit proof of having complied with the instructions to the Regional Board within 15 days after the posting or publication.

viii. The Regional Board holds a public hearing with at least 30 day public notification. The Regional Board may adopt the proposed permit or modify it and adopt it at the public hearing by majority vote. USEPA has 10 days to object to the adopted permit, and the objection must be satisfied before the permit becomes effective.

Attachment 2: Beneficial Uses of Potential Receiving Waters and Applicable Water Quality Objectives

Water Quality Objectives that Pertain to the Ocean Outfall (Estero Bay)

The beneficial uses of selected coastal waters in Region 3 are provided in Table 2-2 of the Basin Plan. The existing ocean outfall discharges into Estero Bay. The beneficial uses assigned to Estero Bay are as follows:

REC1	Water Contact Recreation
REC2	Non-Contact Water Recreation
SHELL	Shellfish Harvesting
IND	Industrial Service Supply
NAV	Navigation
MAR	Marine Habitat
COMM	Commercial and Sport Fishing
RARE	Rare, Threatened, or Endangered Species
WILD	Wildlife Habitat
MIGR	Migration of Aquatic Organisms

Ocean Plan Objectives. The Basin Plan assigns all current and future provisions of the Ocean Plan and the Thermal Plan[19] to all open coastal waters in their jurisdiction. Consequently the majority of the water quality objectives that governs discharges to Estero Bay are contained in the Ocean Plan. With the exception of REC1, REC2, and SHELL, water quality objectives in the Ocean Plan are not explicitly assigned to the beneficial uses listed above. The constituent classes addressed by the Ocean Plan are listed below.

<u>Physical Characteristics (narrative objectives)</u>

- Floating particulates[20]
- Oil and Grease[5]
- Light
- Deposition of inert solids

<u>Chemical Characteristics (narrative objectives)</u>

- DO, pH[5], dissolved sulfide (allowable change from natural conditions)

[19] The Thermal Plan is not addressed in this memorandum.

[20] Section III. *Program of Implementation* of the Ocean Plan assigns numeric effluent limits for POTWs for Grease & Oil, Settleable Solids, Turbidity, and pH.

- Sediment quality (several metals and organics, ammonia, toxicity, radioactivity)
- Nutrients (disallows "objectional aquatic growths" or degradation of indigenous biota)
- Protection of Marine Aquatic Life[21] (numeric objectives)
    - Inorganics (arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc, cyanide, total chlorine residual)
    - Ammonia
    - Toxicity
    - Organic compounds (5 constituents)
    - Radioactivity
- Protection of Human Health[22] (numeric objectives)
    - Noncarcinogens (20 constituents)
    - Carcinogens (42 constituents)

Biological Characteristics (narrative objectives)

- Three objectives addressing degradation of marine communities and quality of fish and shellfish for human consumption)

Radioactivity (narrative objective)

Basin Plan Objectives for Ocean Water. The Basin Plan assigns objectives for dissolved oxygen, pH and radioactivity to all ocean waters that differ from those in the Ocean Plan. In addition, the Basin Plan identifies specific numeric objectives for the MAR and SHELL beneficial uses.

Objectives for all Ocean Waters

- DO (numeric range)
- pH (numeric range)
- Radioactivity (narrative objective)

Objectives for MAR

- pH (allowable range)
- DO (numeric threshold)
- Metals (numeric objectives for 7 metals)

Objectives for SHELL

- Chromium (numeric objective)
- Bacteria (numeric objectives for total coliform)

[21] Expressed as 6-month medians, daily maxima, and instantaneous maxima

[22] Expressed as 30-day averages

Water Quality Objectives that Pertain to Creek Discharge

Beneficial uses for inland surface waters in Region 3 are provided in Table 2-1 of the Basin Plan, and are tabulated below. The beneficial uses assigned to Chorro Creek and Morro Creek are slightly different. The EST use is assigned to Morro Creek, but not Chorro Creek. It is not clear why the EST use is assigned to Morro Creek as there is no apparent estuarine habitat at the mouth of Morro Creek. Although Chorro Creek itself is not assigned the EST beneficial use, discharges to Chorro Creek would be evaluated with respect to their potential downstream effects on Morro Bay Estuary. This apparent disconnect could be discussed with Regional Board staff if one of these discharge scenarios were to be implemented. The BIOL use is assigned to Chorro Creek, but not Morro Creek.

Beneficial Uses Assigned to Morro and Chorro Creeks in the Region 3 Basin Plan

USE		Morro Creek	Chorro Creek
REC1	Water Contact Recreation	X	X
REC2	Non-Contact Water Recreation	X	X
MUN	Municipal and Domestic Supply	X	X
AGR	Agricultural Supply	X	X
COMM	Commercial and Sport Fishing	X	X
RARE	Rare, Threatened, or Endangered Species	X	X
COLD	Cold Freshwater Habitat	X	X
WARM	Warm Freshwater Habitat	X	X
SPWN	Spawning, Reproduction, and/or Early Development (Fish)	X	X
MIGR	Migration of Aquatic Organisms	X	X
WILD	Wildlife Habitat	X	X
FRESH	Freshwater Replenishment	X	X
GWR	Ground Water Recharge	X	X
EST	Estuarine Habitat	X	
BIOL	Preservation of Biological Habitats of Special Significance		X

California Toxics Rule (CTR). Numeric objectives for several dozen "Priority Pollutants," that apply to all inland waters, enclosed bays, and estuaries in California, were promulgated by USEPA in 2000 in the CTR[23]. CTR criteria are divided into several categories reflecting water quality required to avoid (1) acute and chronic toxicity for aquatic organisms, and (2) human health impacts from consumption of water and/or aquatic organisms; separate aquatic life criteria were developed for freshwater (streams, lakes) and salt water (enclosed bays and estuaries). The categories of criteria in the CTR that pertain to *freshwater with the MUN use* are pertinent to discharges to Morro Creek or Chorro Creek and are as follows:

- Freshwater Aquatic Life: Acute (32 constituents)

[23] Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule Federal Register / Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations. Adding Section 131.38 to 40 CFR

- Freshwater Aquatic Life: Chronic (30 constituents)
- Human Health: Consumption of Water & Organisms (90 constituents)

CTR criteria are implemented using the procedures described in the 2005 Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also know as the State Implementation Policy (SIP). The SIP addresses matters such as monitoring requirements, test procedures and other compliance determinations, compliance schedules, water effect ratios (WER), metal translators, dilution and mixing zones, and derivation of effluent limits.

Basin Plan Objectives. The Basin Plan assigns Title 22 drinking water standards to all surface waters with the MUN use. Consequently discharges to either Morro Creek or Chorro Creek will be evaluated with regard to whether they cause exceedances of the Maximum Concentration Limits (MCLs) from Title 22 in receiving water. In addition, the Basin Plan assigns three other categories of objectives that are pertinent to discharges to one or both of the creeks: (1) general objectives that apply to all inland waters, (2) specific objectives for several other beneficial uses (AGR, REC1, REC2, COLD, WARM, SPWN), and (3) surface water objectives for salts that apply specifically to Chorro Creek. These Basin Plan objectives are outlined below.

<u>General Objectives</u>

- Color (allowable change from natural)
- Narrative objectives (prohibiting nuisance or adverse effect on beneficial uses)
    - Taste and Odors, Floating material, Suspended matter, Settleable Material, Biostimulatory Substances, Suspended Sediment
    - Temperature (narrative applies only to inland surface water)
    - Toxicity
    - Pesticides (narrative, except that total OC pesticides must not be detectable)
- pH (allowable range)
- Dissolved oxygen (numeric limit)
- Unionized ammonia (numeric limit)
- Other organics (numeric limits for methylene blue activated substances, phenols, PCBs and phthalate esters)

<u>Objectives for MUN</u>

- pH (allowable range)
- Title 22 Primary and Secondary Maximum Concentration Limits (MCL)
- Phenol (numeric limit)

<u>Objectives for AGR</u>

- pH (allowable range)
- Dissolved oxygen (numeric limit)

- Irrigation Supply (numeric limits for 18 inorganics)
- Livestock Watering (numeric limits for 16 inorganics)

Objectives for REC1 and REC2

- pH (allowable range)
- Fecal coliform (numeric limits)

Objectives for COLD and WARM

- pH
- Dissolved oxygen (numeric limit)
- Temperature (allowable change from natural)
- Toxic metals (cadmium, chromium, copper, lead, mercury, nickel, zinc)

Objectives for SPWN

- Cadmium (numeric limit)
- Dissolved oxygen (numeric limit)

Surface Water in Chorro Creek

- TDS, Cl, SO4, B, Na (annual means)

Water Quality Objectives that Pertain to Groundwater

Discharge to percolation ponds would be considered by the Regional Board as a discharge to groundwater. Table 2-3 and Figure 2-2 in the Basin Plan identify the groundwater basins in Region 3. Morro Creek is in the Morro Valley Basin (Basin 3-41). Chorro Creek is in the Chorro Valley Basin (Basin 3-42). The beneficial uses assigned to *all groundwater* in Region 3 (except to the Soda Lake Sub-basin) are as follows[24]:

MUN	Municipal and Domestic Supply
AGR	Agricultural Supply
IND	Industrial Service Supply

In addition to the MUN and AGR objectives, the Basin Plan assigns objectives for salts and nitrogen (*total nitrogen*, not nitrate) to selected groundwater basins in the Central Coast Region; the Chorro Valley Basin is one of these basins. Although at the time of this writing, discharge to percolation ponds in the Chorro Valley Basin was not being considered; the groundwater objectives for the Chorro Valley Basin are included in the list below.

Objectives for MUN (for groundwater)

[24] The Basin Plan does not include a table assigning beneficial uses to individual groundwater basins (as it does for many coastal and inland waters). Instead, at the beginning of Chapter 2, the Basin Plan indicates in a narrative that all groundwater in Region 3 is suitable for the MUN, AGR, and IND uses.

- Bacteria (7-day median for coliform bacteria)
- Title 22 Primary and Secondary Maximum Concentration Limits (MCL)

Objectives for AGR

- pH (allowable range)
- Dissolved Oxygen (numeric limit)
- Irrigation Supply (numeric limits for 18 inorganics)
- Livestock Watering (numeric limits for 16 inorganics, including for "Nitrate+Nitrite" and "Nitrite")[25]

Objectives for Chorro Valley Basin

- TDS, Cl, SO4, B, Na, N (numeric limits, medians based on "data averages")

[25] The Livestock Watering limits in Table 3-4 of the Basin Plan for "Nitrate+Nitrite" and for "Nitrite" are 100 mg/L and 10 mg/L, respectively.

Attachment 3: Effluent Water Quality Evaluation

Effluent water quality was compared to water quality objectives for each type of receiving water (surface water, ocean, percolation ponds) to determine which constituents would have effluent limits in each type of discharge permit. An exceedance would mean that an effluent limit would be required. For discharges to Chorro or Morro Creek, effluent limits would be very similar to the water quality objective because there would be no dilution available. However, effluent limits for the Ocean discharge would be much higher than the water quality objectives due to a dilution factor of at least 133:1 being applied.

DISCHARGE TO SURFACE WATER

Both Chorro Creek and Morro Creek are assigned the MUN use, so Title 22 MCLs were included in the suite of objectives for RPA. Concentrations of ten constituents in effluent exceeded the lowest applicable objective. Hardness was assumed to be 150 mg/L.

Comparison of Effluent Data with Water Quality Objectives Pertinent to Discharges to Creek

			Basin Plan						Title 22	CTR[a]					
				Table 3.4											
Constituent	Units	Detected Effluent Maximum	MUN	Irrig Supply	Live-stock	WARM & COLD	SPWN	Chorro Creek	MCL	Acute	Chronic	HH	Lowest Objective		Exceeds
Constituents with concentrations likely to change based on the plant design/upgrades:															
Ammonia (as N)	mg/L	ND[b]	0.03	-	-	-	-	-	-	-	-	-	0.025	Basin Plan MUN (unionized)	
Nitrate + Nitrite (as N)	mg/L	10[b]	-	-	100	-	-	-	10	-	-	-	10	MCL	
Constituents with concentrations that may incidentally change due to upgrades:															
Antimony	µg/L	11	-	-	-	-	-	-	6	-	-	14	6	MCL	X
Arsenic, Total	µg/L	1.5	50	100	200	-	-	-	10	340	150	-	10	MCL	
Beryllium	µg/L	1.2	-	100	-	-	-	-	4	-	-	-	4	MCL	
Cadmium, Total	µg/L	0.64	10	10	50	30	3	-	5	7.1	3.4	-	3	SPWN[c]	
Chromium III, Total	µg/L	1.8	-	100	1,000	-	-	-	50	2,420	289	-	50	MCL	
Chromium Total	µg/L	2.6	50	100	1,000	50	-	-	50	2,420	289	-	50	MCL	

Constituent	Units	Detected Effluent Maximum	Basin Plan						Title 22	CTR[a]			Lowest Objective		Exceeds
				Table 3.4											
			MUN	Irrig Supply	Live-stock	WARM & COLD	SPWN	Chorro Creek	MCL	Acute	Chronic	HH			
Chromium VI, Total	µg/L	2.6	-	100	1,000	-	-	-	10	16	11	-	10	MCL	
Copper, Total	µg/L	22	-	200	500	30	-	-	1,300	21	13	1,300	13	CTR Chronic	X
Cyanide	µg/L	94	-	-	-	-	-	-	150	22	5.2	700	5.2	CTR Chronic	X
Lead, Total	µg/L	1.8	50	5,000	100	30	-	-	15	137	5.3		5.3	CTR Chronic	
Mercury	µg/L	0.088	2	-	10	0.2	-	-	2	-	-	0.05	0.05	CTR HH	X
Nickel, Total	µg/L	4.3	-	200	-	400	-	-	100	661	74	610	74	CTR Chronic	
Selenium, Dissolved	µg/L	2.7	10	20	50	-	-	-	50	-	5.0	-	5	CTR Chronic	
Selenium, Total	µg/L	2.7	10	20	50	-	-	-	50	-	-	-	10	MUN	
Silver, Total	µg/L	4.6	50	-	-	-	-	-	100	8.2	-	-	8.2	CTR Acute	
Zinc, Total	µg/L	71	-	2,000	25,000	200	-	-	5,000	169	169	-	169	CTR Chronic[d]	
2,3,7,8-TCDD (dioxin)	µg/L	1.8E-07	-	-	-	-	-	-	3E-05	-	-	1.3E-08	1.3E-08	CTR HH	X
Bis(2-ethylhexyl) Phthalate	µg/L	8.2	4	-	-	-	-	-	4	-	-	1.8	1.8	CTR HH	X
Toluene	µg/L	0.28	-	-	-	-	-	-	150	-	-	6,800	150	Primary MCL	
Halomethanes[e]	µg/L	0.25	-	-	-	-	-	-	80	-	-	-	80	Primary MCL	
Radionuclides – gross alpha	pCi/L	3.79	-	-	-	-	-	-	15	-	-	-	15	Primary MCL	

Constituent	Units	Detected Effluent Maximum	Basin Plan						Title 22	CTR[a]			Lowest Objective		Exceeds
				Table 3.4											
			MUN	Irrig Supply	Live-stock	WARM & COLD	SPWN	Chorro Creek	MCL	Acute	Chronic	HH			
Radionuclides – gross beta	pCi/L	19	-	-	-	-	-	-	[f]	-	-	-	[f]	Primary MCL	
pH	SU	7.3-7.9	6.5-8.5						-	-	-	-	6.5-8.5	Basin Plan	[g]
Constituents with concentrations that are not expected to change due to plant upgrades:															
Boron	mg/L	0.4[h]	-	0.75	5	-	-	0.2	-	-	-	-	0.2	Chorro Ck	X
Chloride	mg/L	369[h]	-	-	-	-	-	50	250	-	-	-	50	Chorro Ck	X
Sodium	mg/L	223[h]	-	-	-	-	-	50	-	-	-	-	50	Chorro Ck	X
Sulfate	mg/L	-	-	-	-	-	-	50	250	-	-	-	50	Chorro Ck	
TDS	mg/L	1,077[i]	-	-	-	-	-	500	500	-	-	-	500	Chorro Ck	X

[a] CTR metals criteria for cadmium, chromium III, copper, lead, nickel, silver, and zinc were calculated assuming a creek hardness of 150 mg/L. This is greater than the Basin Plan limit for "soft" water (100 mg/L), therefore "hard" Basin Plan objectives were applied.

[b] Adjusted based on anticipated future effluent quality from new WRF (Tertiary-2.2 for unrestricted reuse per Title 22 Regulations).

[c] Cadmium in effluent would exceed the "soft" Basin Plan objective for SPWN of 0.4 µg/L.

[d] Zinc in effluent would exceed the "soft" Basin Plan objective for WARM & COLD of 4 µg/L.

[e] Halomethanes are defined in the Ocean Plan as the sum of bromoform, methyl bromide (bromomethane), and methyl chloride (chloromethane). However, the MCL of 80 µg/L is for trihalomethanes, defined in Title 22 as the sum of bromoform, chloroform, dibromochloromethane, and dichlorobromomethane.

[f] The Title 22 primary MCL for radionuclides – gross beta is 4 mrem/yr, while the effluent data are in units of pCi/L. The individual emitters must be converted from pCi/L to mrem/yr before this comparison can be made.

[g] pH levels are currently very stable, however this could change under the new treatment system.

[h] Data are from six 24-hour composite samples taken between February 8, 2012 and February 14, 2012 (*2012 Recycled Water Feasibility Study*, Dudek, Draft March 9, 2012).

[i] Data from daily conductivity/TDS monitoring were provided from July 2012 through July 2013.

DISCHARGE TO OCEAN

As noted above, data are compared to water quality objectives to determine if an effluent limit would be warranted. Effluent limits would actually be much greater than the objectives for this scenario since a dilution factor of 133:1 would be included in the effluent limit calculation.

Comparison of Effluent Data with Water Quality Objectives in the Ocean Plan.

Constituent	Units	Detected Effluent Maximum	Chronic Toxicity Estimate	Human Health 30-Day Average	Marine Life 6-Month Median	Daily Max	Instant. Max	Lowest Objective		RP[a]
Constituents with concentrations likely to change based on the plant design/upgrades:										
Ammonia (as N)	mg/L	ND[b]	4	-	0.6	2.4	6	0.6	Marine Life 6-Month Med.	[c]
Total Coliform	MPN/ 100mL	2.2[b]	-	-	-	-	10,000	1,000	REC1 30-day 5-sample average	[c]
Chronic Toxicity	TUc	10	-	-	-	1		1	Daily Max	
Constituents with concentrations that may incidentally change due to upgrades:										
Antimony	µg/L	11	-	1,200	-	-	-	1,200	HH 30-Day Average	
Arsenic, Total	µg/L	1.5	19	-	8	32	80	8	Marine Life 6-Month Med.	
Beryllium	µg/L	1.2	-	0.033	-	-	-	0.033	HH 30-Day Average	
Cadmium, Total	µg/L	0.64	8	-	1	4	10	1	Marine Life 6-Month Med.	
Chromium III, Total	µg/L	1.8	-	190,000	-	-	-	190,000	HH 30-Day Average	
Chromium VI, Total	µg/L	2.6	18	-	2	8	20	2	Marine Life 6-Month Med.	
Copper, Total	µg/L	22	5	-	3	12	30	3	Marine Life 6-Month Med.	X
Cyanide	µg/L	94	10	-	1	4	10	1	Marine Life 6-Month Med.	X
Lead, Total	µg/L	1.8	22	-	2	8	20	2	Marine Life 6-Month Med.	
Mercury	µg/L	0.088	0.4	-	0.04	0.16	0.4	0.04	Marine Life 6-Month Med.	
Nickel, Total	µg/L	4.3	48	-	5	20	50	5	Marine Life 6-Month Med.	
Selenium	µg/L	2.7	-	-	15	60	150	15	Marine Life 6-Month Med.	
Silver, Total	µg/L	4.6	3	-	0.7	2.8	7	0.7	Marine Life 6-Month Med.	

Constituent	Units	Detected Effluent Maximum	Chronic Toxicity Estimate	Human Health 30-Day Average	Marine Life 6-Month Median	Daily Max	Instant. Max	Lowest Objective		RP[a]
Zinc, Total	µg/L	71	51	-	20	80	200	20	Marine Life 6-Month Med.	
2,3,7,8-TCDD (dioxin)	µg/L	1.8E-07	-	3.9E-09	-	-	-	3.9E-09	HH 30-Day Average	X
Bis(2-ethylhexyl) Phthalate	µg/L	8.2	-	3.5	-	-	-	3.5	HH 30-Day Average	
Chloroform	µg/L	0.61	-	130	-	-	-	130	HH 30-Day Average	
Non-Chlorinated Phenolics[d]	µg/L	3.3	-	-	30	120	300	30	Marine Life 6-Month Med.	
Toluene	µg/L	0.28	-	85000	-	-	-	85,000	HH 30-Day Average	
Halomethanes[e]	µg/L	0.25	-	-	-	-	-	130	REC1 30-day 5-sample average	

[a] The reasonable potential analysis was performed following the Ocean Plan method.

[b] Adjusted based on anticipated future effluent quality from new WRF (Tertiary-2.2 for unrestricted reuse per Title 22 Regulations). The current effluent maximum is 900 MPN/100mL with a 7-day median maximum of 50 MPN/100mL. These levels are expected to diminish with the treatment plant upgrades.

[c] The maximum concentrations are insufficient to perform the Ocean Plan RPA. Individual data points are necessary.

[d] Non-chlorinated phenolics include 2,4-Dimethylphenol, 4,6-Dinitro-2-Methylphenol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, and Phenol.

[e] Halomethanes are defined in the Ocean Plan as the sum of bromoform, methyl bromide (bromomethane), and methyl chloride (chloromethane).

Basin Plan objectives for ocean water (MAR and SHELL uses) were compared to effluent data with and without the Ocean Plan RPA procedure. The Basin Plan objective for cadmium was lower than that in the Ocean Plan, and exceeded by the effluent maximum concentration, however there was no reasonable potential for cadmium following the Ocean Plan method. It is unclear whether the metal nickel is appropriate to compare with a "nickel salts" objective from the Basin Plan. None of the Basin Plan objectives for MAR and SHELL uses would trigger reasonable potential following the Ocean Plan method.

Comparison of Effluent Data with Basin Plan Objectives for the Ocean

Constituent	Units	Detected Effluent Maximum	Basin Plan MAR use	Basin Plan SHELL use	Notes	RP[a]
Constituents with concentrations likely to change based on the plant design/upgrades:						
Total Coliform	MPN/ 100mL	2.2[b]	-	70	Lower than Ocean Plan	[c]
Constituents with concentrations that may incidentally change due to upgrades:						
Cadmium, Total	µg/L	0.64	0.2	-	Lower than Ocean Plan	
Chromium Total	µg/L	1.8	50	10		
Copper, Total	µg/L	22	10	-		
Lead, Total	µg/L	1.8	10	-		
Mercury	µg/L	0.088	0.1	-		
Nickel salts	µg/L	(4.3 nickel)	2	-		
Zinc, Total	µg/L	71	20	-		

[a] The reasonable potential analysis was performed following the Ocean Plan method.

[b] Adjusted based on anticipated future effluent quality from new WRF (Tertiary-2.2 for unrestricted reuse per Title 22 Regulations).

[c] The maximum concentration is insufficient to perform the Ocean Plan RPA. Individual data points are necessary.

DISCHARGE TO LAND

There were no effluent data to compare to the Basin Plan objectives for Chorro Valley Groundwater Basin (boron, nitrogen, TDS, sulfate, chloride, sodium). However, the maximum sum of ammonia-N and nitrate-N in the effluent dataset of 24 mg N/L (occurring in January 2011) would exceed the Basin Plan objective for nitrogen.

Comparison of Effluent Data for Detected Constituents with Objectives Pertinent to Discharge to Groundwater (via Land)

Constituent	Units	Detected Effluent Maximum	Basin Plan			Title 22	Lowest Objective		Exceeds
			Chorro Ground	Irrigation Supply	Livestock Watering	MCL			
Constituents with concentrations likely to change based on the plant design/upgrades:									
Nitrogen	mg/L	10[a]	5	-	-	-	5	Basin Plan Chorro Groundwater	X
Nitrate + Nitrite (as N)	mg/L	10[a]	-	-	100	10	10	Primary MCL	
Total Coliform	MPN/100mL	2.2[a]	-	-	-	-	2.2	Basin Plan MUN 7-day median	
Constituents with concentrations that may inciidentally change due to upgrades:									
Antimony	µg/L	11	-	-	-	6	6	Primary MCL	X
Arsenic, Total	µg/L	1.5	-	100	200	10	10	Primary MCL	
Beryllium	µg/L	1.2	-	100	-	4	4	Primary MCL	
Cadmium, Total	µg/L	0.64	-	10	50	5	5	Primary MCL	
Chromium III, Total	µg/L	1.8	-	100	1,000	50	50	Primary MCL	
Chromium VI, Total	µg/L	2.6	-	100	1,000	10	10	Primary MCL	
Copper, Total	µg/L	22	-	200	500	1,300	200	Irrigation Supply	
Cyanide	µg/L	94	-	-	-	150	150	Primary MCL	
Lead, Total	µg/L	1.8	-	5,000	100	15	15	Primary MCL	
Mercury	µg/L	0.088	-	-	10	2	2	Primary MCL	
Nickel, Total	µg/L	4.3	-	200	-	100	100	Primary MCL	
Selenium	µg/L	2.7	-	20	50	50	20	Irrigation Supply	
Silver, Total	µg/L	4.6	-	-	-	100	100	Secondary MCL	
Zinc, Total	µg/L	71	-	2,000	25,000	5,000	2,000	Irrigation Supply	

Constituent	Units	Detected Effluent Maximum	Basin Plan			Title 22	Lowest Objective		Exceeds
			Chorro Ground	Irrigation Supply	Livestock Watering	MCL			
2,3,7,8-TCDD (dioxin)	µg/L	1.8E-07	-	-	-	3E-05	3E-05	Primary MCL	
Bis(2-ethylhexyl) Phthalate	µg/L	8.2	-	-	-	4	4	Primary MCL	X
Toluene	µg/L	0.28	-	-	-	150	150	Primary MCL	
Halomethanes[b]	µg/L	0.25	-	-	-	80	80	Primary MCL	
Constituents with concentrations that are not expected to change due to plant upgrades:									
Boron	mg/L	0.4[c]	0.2	0.75	5	-	0.2	Basin Plan Chorro Groundwater	X
Chloride	mg/L	369[c]	250	-	-	250	250	Basin Plan Chorro Groundwater	X
Sodium	mg/L	223[c]	50	-	-	-	50	Basin Plan Chorro Groundwater	X
Sulfate	mg/L	-	100	-	-	250	100	Basin Plan Chorro Groundwater	
TDS	mg/L	1,077[d]	1,000	-	-	500	500	Secondary MCL	X

[a] Adjusted based on anticipated future effluent quality from new WRF (Tertiary-2.2 for unrestricted reuse per Title 22 Regulations). The current effluent maximum is 900 MPN/100mL with a 7-day median maximum of 50 MPN/100mL. These levels are expected to diminish with the treatment plant upgrades.

[b] Halomethanes are defined in the Ocean Plan as the sum of bromoform, methyl bromide (bromomethane), and methyl chloride (chloromethane). However, the MCL of 80 µg/L is for trihalomethanes, defined in Title 22 as the sum of bromoform, chloroform, chlorodibromomethane, and dichlorobromomethane.

[c] Data are from six 24-hour composite samples taken between February 8, 2012 and February 14, 2012 (*2012 Recycled Water Feasibility Study*, Dudek, Draft March 9, 2012).

[d] Data from daily conductivity/TDS monitoring were provided from July 2012 through July 2013.

NON-DETECTED CONSTITUENTS IN EFFLUENT

Constituents for which all Sample Results were Non Detects

Thallium	Bis(2-chloroethyl)Ether	gamma-BHC (Lindane)
1,1,1-Trichloroethane (1,1,1-TCA)	Bis(2-chloroisopropyl)Ether	Heptachlor
1,1,2,2-Tetrachloroethane	Carbon tetrachloride	Heptachlor epoxide
1,1,2-Trichloroethane (1,1,2-TCA)	Chlordanes (total)[a]	Hexachlorobenzene
1,1-Dichloroethylene (1,1-DCE)	Chlorinated Phenolics[b]	Hexachlorobutadiene
1,2-Dichloroethane (1,2-DCA)	Chlorobenzene	Hexachlorocyclopentadiene
1,2-Diphenylhydrazine	Chlorodibromomethane	Hexachloroethane
1,3-Dichloropropene	DDTs (total)[c]	Isophorone
1,4-Dichlorobenzene (p-DCB)	Dichlorobenzenes[d]	Methylene Chloride
2,4,6-Trichlorophenol	Dichlorobromomethane	Nitrobenzene
2,4-Dinitrophenol	Dieldrin	N-Nitrosodimethylamine (NDMA)
2,4-Dinitrotoluene	Diethyl Phthalate	N-Nitrosodi-n-Propylamine
2-Methyl-4,6-Dinitrophenol	Dimethyl Phthalate	N-Nitrosodiphenylamine
3,3-Dichlorobenzidine	Di-n-Butyl Phthalate	PAHs (total)[e]
Acrolein	Endosulfan I	PCBs (total)[f]
Acrylonitrile	Endosulfan II	Tetrachloroethylene (PCE)
Aldrin	Endosulfan Sulfate	Toxaphene
Benzene	Endrin	Tributyltin
Benzidine	Ethylbenzene	Trichloroethylene (TCE)
Bis(2-Chloroethoxy)Methane	Fluoranthene	Vinyl Chloride

[a] Total chlordanes include a-chlordane, a-chlordene, cis-nonachlor, gamma-chlordane, gamma-chlordene, oxychlordane, and trans-nonachlor.

[b] Chlorinated phenolics include 2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methylphenol, pentachlorophenol, and 2,4,6-trichlorophenol.

[c] DDTs includes 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

[d] Dichlorobenzenes includes 1,2-Dichlorobenzene and 1,3-Dichlorobenzene.

[e] PAHs includes Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(a)Pyrene, Benzo(b)fluoranthen, Benzo(g,h,i)perylene, Benzo(k)fluoranthen, Chrysene, Dibenzo(a,h)anthraces, Fluorene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene.

[f] Total PCBs include aroclors 2016, 1221, 1232, 1242, 1248, 1254, and 1260.

OBJECTIVES FOR WHICH EFFLUENT DATA WERE NOT AVAILABLE

It should be noted that not all of these constituents are required for compliance determination, and many are not commonly monitored by dischargers.

Constituents with Applicable Criteria/Objectives and No Effluent Sample Data in Semi-Annual Reports

Constituent	Drinking Water		Basin Plan					CTR	Proposed CTR	Ocean Plan
	Title 22	PHG	MUN	AGR Irrigation/ Livestock	WARM & COLD/ SPWN	Chorro Crk	SHELL			
Bacterial[a]										
Enterococcus							X			X
Inorganics										
Asbestos	X	X						X (MUN)		
Aluminum	X	X	X	X						
Barium	X	X	X							
Cobalt				X						
Fluoride	X	X		X						
Iron, dissolved	X			X						
Iron, total				X						
Lithium				X						
Manganese, dissolved	X			X						
Manganese, total				X						
Molybdenum				X						
Vanadium				X						
Arsenic, Dissolved	X	X	X	X				X[b]		X
Cadmium, Dissolved	X	X	X	X	X			X[b]		X
Chromium III, Dissolved	X			X				X (fresh) [b]		X
Chromium VI, Dissolved	X	X		X				X[b]		X
Copper, Dissolved	X	X		X	X			X[b]		X

Constituent	Drinking Water		Basin Plan					CTR	Proposed CTR	Ocean Plan
	Title 22	PHG	MUN	AGR Irrigation/ Livestock	WARM & COLD/ SPWN	Chorro Crk	SHELL			
Lead, Dissolved	X		X	X	X			X[b]		X
Nickel, Dissolved	X			X	X			X[b]		X
Silver, Dissolved			X					X[b]		X
Zinc, Dissolved				X	X			X[b]		X
Nitrogen										
Nitrate (as NO3)[c]	X		X							
Nitrite (as N)	X			X						
Nitrogen						X (ground)				
Organics										
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	X	X	X							
1,1-Dichloroethane (1,1-DCA)	X	X	X							
1,2,3-Trichloropropane	X	X								
1,2,4,5-Tetrachlorobenzene									X	
1,2,4-Trichlorobenzene	X	X							X	
1,2-Dibromo-3-chloropropane (DBCP)	X	X	X							
1,2-Dichloropropane	X	X	X					X	X	
1,2-Trans-Dichloroethylene	X							X	X	
2,4,5-TP (Silvex)	X	X	X						X	
2,4,5-Trichlorophenol									X	
2,4-Dichlorophenoxyacetic acid (2,4-D)	X	X	X						X	
2,4-Dimethylphenol[d]								X	X	
2-Chloronaphthalene								X	X	

Constituent	Drinking Water		Basin Plan					CTR	Proposed CTR	Ocean Plan
	Title 22	PHG	MUN	AGR Irrigation/ Livestock	WARM & COLD/ SPWN	Chorro Crk	SHELL			
Benzo(b)Fluoranthene								X	X	
Alachlor	X	X								
alpha-BHC								X	X	
Atrazine	X	X	X							
Bentazon	X	X	X							
beta-BHC								X	X	
Bis(2-chloromethyl)Ether									X	
Bromoform								X	X	
Butylbenzyl Phthalate								X	X	
Carbofuran	X	X	X							
cis-1,2-Dichloroethylene	X	X	X							
Dalapon	X	X								
Di(2-ethylhexyl)adipate	X	X								
Diazinon										
Dinoseb	X	X								
Diquat	X	X								
Endosulfan Sulfate								X	X	
Endothal	X	X								
Endrin Aldehyde								X	X	
Ethylene dibromide (EDB)	X	X	X							
Glyphosate	X	X	X							
MBAS	X		X							
Methoxychlor	X		X						X	
Methyl Bromide								X	X	

Constituent	Drinking Water		Basin Plan					CTR	Proposed CTR	Ocean Plan
	Title 22	PHG	MUN	AGR Irrigation/ Livestock	WARM & COLD/ SPWN	Chorro Crk	SHELL			
Methyl tertiary butyl ether (MTBE)	X									
Molinate	X		X							
Monochlorobenzene	X		X							
Oxamyl	X									
Phenol[d]			X					X	X	
Picloram	X									
Simazine	X		X							
Styrene	X									
Thiobencarb	X		X							
trans-1,2-Dichloroethylene	X		X							
Trichlorofluoromethane (Freon 11)	X		X							
Xylenes	X		X							
Radionuclides										
Radium-226 + Radium-228	X									
Strontium-90	X									
Tritium	X									
Uranium	X									
Ions										
Bromate	X	X								
Chlorite	X	X								
Perchlorate										
Sulfate	X					X				
Others										
Haloacetic Acids (five) (HAA5)	X									

Constituent	Drinking Water		Basin Plan					CTR	Proposed CTR	Ocean Plan
	Title 22	PHG	MUN	AGR Irrigation/ Livestock	WARM & COLD/ SPWN	Chorro Crk	SHELL			
Dissolved Oxygen			X							

[a] Effluent data for total coliform were collected 5 days per week, however the data were not included in the semi-annual reports used for this analysis. All total coliform was assumed to be fecal.

[b] CTR criteria is promulgated for total metals, however the dissolved metals objectives are also available.

[c] The nitrate-N sampling data suffices for nitrate compliance.

[d] Non-chlorinated phenolics monitoring was performed to comply with Ocean Plan objectives, however the CTR contains criteria for the individual constituents.

SPECIAL AGENDA NO: II

MEETING DATE: September 23, 2014

II. CONSIDERATION OF HOLDING JOINT WRFCAC / CITY COUNCIL MEETINGS ON OCTOBER 8th, OCTOBER 22nd & NOVEMBER 5th

THIS IS A DISCUSSION ITEM ONLY; THERE IS NO STAFF REPORT

SPECIAL AGENDA NO: III

MEETING DATE: September 23, 2014

Staff Report

TO: **Honorable Mayor and City Council** **DATE: September 18, 2014**

FROM: **Rob Livick, PE/PLS - Public Services Director/City Engineer**

SUBJECT: **Review of the Status of the California Men's Colony Option Evaluation**

RECOMMENDATION

Staff recommends the Council review two letters; one sent to County Public Works and the other to the Central Coast Regional Water Quality Control Board, regarding the assessment of the CMC WWTP as a regional alternative and provide direction to staff.

BACKGROUND/DISCUSSION

The attached two letters were sent to both Ken Harris, Executive Officer at the Regional Water Quality Control Board and to Mark Hutchinson, Deputy Public Works Director for San Luis Obispo County with copies to a number of individuals.

The letters outline the progress the City has made in our efforts to come to a final decision for the location of the Water Reclamation facility including the associated challenges faced with the California Men's Colony Option.

Additionally, staff is in the final throws of executing a contract with Carollo Engineering for the analysis of the CMC option.

ATTACHMENTS

1. Letter to Ken Harris
2. Letter to Mark Hutchinson
3. Response from Ken Harris

Prepared by: __RL __ **Dept. Review: RL__**

City Manager Review:_____

City Attorney's Review:_____

City of Morro Bay

Morro Bay, CA 93442
(805) 772-6200
www.morro-bay.ca.us

September 17, 2014

Ken Harris – Executive Officer
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA. 93401-7906
Ken.Harris@waterboards.ca.gov

Subject: Assessment of California Men's Colony (CMC) Waste Water Treatment Facility as a Regional Alternative for City of Morro Bay and Cayucos Sanitary District

Dear Mr. Harris,

We'd like to take this opportunity to update you on the progress that has been made on the subject assessment since our meeting of March 21, 2014. During that meeting the County, agreed that they would be best suited to take the lead in awarding a contract to the existing plant consultant, Carollo Engineers, to assess the capacity and other feasibility concerns related to the potential transformation of the CMC WWTP into a regional facility.

Your staff also agreed to determine whether supplemental environmental project (SEP) funds could be allocated to pay for this contract. The City and District expressed our mutual commitment to achieve an impartial assessment of the feasibility of a regional alternative and both have continued to assemble technical information to fully inform this process.

Since that March meeting, the City of Morro Bay has entered into three separate consultant agreements to assess various technical issues (permitting, water rights, groundwater benefits and funding implications) related to this regionalization concept with the intent of making a final siting decision in August 2014. In late May and June it became increasingly apparent that the County was not making satisfactory progress in awarding a Carollo contract, so City staff and consultants became more involved to keep this work moving forward. To this end City staff sought feedback from your staff on the feasibility of receiving SEP funding for the project and also met on July 10, 2014 with District staff to work out scope issues on the Carollo contract. Later that month, City and County staff met to further review the Carollo scope. Unfortunately, changes in Public Works leadership at San Luis Obispo County and failure of the key County

Inter-tie project to receive grant funding, have continued to hamper the County regionalization efforts at CMC to date. On August 8, 2014 the County advised by email that: "*…The County will provide support as we are able (note that we have established a Chorro Valley Working Group including CDCR and CMC to facilitate communication on water and infrastructure issues), but we are not in a position to be Carollo's client."*

These delays have required the City to reschedule the siting decision until their November 12, 2014 City Council meeting and we are now rapidly reaching the point where we must award the Carollo contract on or about September 19, 2014 or face further delays in our schedule to site and build a replacement Water Reclamation Facility.

Since the SEP funding has not been resolved, we are inquiring regarding the allocation of this funding and any comments you may offer on the project scope. Although we will proceed with award using City funds, we will continue to seek financial reimbursement from your SEP program.

By separate letter we are asking the County to clarify their current and future interests in this project and provide a prospective timeline County Operation and/or Ownership. Without a highly motivated proponent such as SLO County, who has an established relationship with CDCR to drive a regional solution, we fear that this approach may no longer be a viable alternative.

We hope you will find the information provided by this letter helpful in evaluating the current situation, determining if SEP funding can be allocated for a CMC assessment facilitated by the City of Morro Bay.

Sincerely,

Rob Livick, PE/PLS
Public Services

cc:
Edward Kreins, Interim City Manager
David Buckingham, City Manager
Joe Pannone, City Attorney
John W. Fox, Assistant City Attorney
John Rickenbach
Mike Nunley
Mark Hutchinson, Deputy Director County Public Works
Rick Koon, Cayucos Sanitary District General Manager
Tim Carmel, Cayucos Sanitary District Counsel

City of Morro Bay

Morro Bay, CA 93442
(805) 772-6200
www.morro-bay.ca.us

September 17, 2014

Mark Hutchinson, Deputy Public Works Director
Public Works and Transportation
San Luis Obispo County
County Government Center Room 207
San Luis Obispo, CA 93408

Subject: Assessment of California Men's Colony (CMC) Waste Water Treatment Plant as a Regional Alternative to serve City of Morro Bay and Cayucos Sanitary District

Dear Mr. Hutchinson,

We'd like to take this opportunity to update you on the progress that has been made on the subject assessment since our meeting of March 21, 2014 with the Regional Water Quality Control Board staff which was attended by then County Public Works Director, Paavo Ogren. During that meeting it was our understanding that the County Public Works Director agreed to take the lead in awarding a contract to the existing plant consultant, Carollo Engineers, to assess the capacity and other feasibility concerns related to the potential transformation of the CMC WWTP into a regional facility.

Water Board staff also agreed to determine whether supplemental environmental project (SEP) funds could be allocated to pay for this contract. The City and District expressed our mutual commitment to achieve an impartial assessment of the feasibility of a regional alternative and both have continued to assemble technical information to fully inform this process.

Since that time the City of Morro Bay has entered into three separate consultant agreements to assess various technical issues (permitting, water rights, groundwater benefits and funding implications) related to this regionalization concept with the intent of making a final siting decision in August 2014. In late May and June it became increasingly apparent, due to changes in the County Public Works Department, the County did not have the available resources to oversee the assessment and issue a contract to Carollo, and your email dated August 5 confirmed this situation.

Based on this, City staff and consultants became more involved to keep this work moving forward. To this end City staff sought feedback from Water Board staff on the feasibility of the CMC assessment project receiving SEP funding and also met on July 10, 2014 with District staff to work out scope issues on the Carollo contract. Later that month City and County Public Works staff met to further review the Carollo scope.

At the Joint Powers Agreement meeting last week, District staff and Board Members indicated that they met with County Public Works staff on September 10 and did not leave with the same perspective present in your August 5 email. The City understands of the County's role with CMC as a regional facility a regional project is as follows:

1) The County's role will be reviewing and commenting on the Carollo assessment study.

2) There is no item on your current work program to take the lead with a regional facility or to complete any agreements with the California Department of Corrections and Rehabilitation that would facilitate the County assuming O&M (and ownership) responsibilities for both the Water System and WWTP at CMC in the short term.

The City has rescheduled the siting decision until their November 12, 2014 Council meeting. We have reached the point where we must award the Carollo contract on or about September 19, 2014 or face further delays in our schedule to site and build a replacement Water Reclamation Facility. By separate letter we asked the Water Board staff to confirm their ability to provide SEP funding for the assessment of plant capacity and other feasibility concerns related to the potential transformation of the CMC WWTP into a regional facility.

Without a highly motivated proponent who has an established relationship with CDCR to drive a regional solution, we fear that this approach may no longer be a viable alternative in the eyes of the Water Board and the other interested parties settlement agreement as well as the many regulatory authorities that will be involved in the approval and permitting of this project.

We hope you will find the information provided by this letter helpful in evaluating the current situation, and reassessing the viability of a regional project and look forward to hearing from you if our understanding of the County's role is incorrect.

Sincerely,

Rob Livick, PE/PLS
Public Services

cc:
Edward Kreins, Interim City Manager
David Buckingham, City Manager
Joe Pannone, City Attorney
John W. Fox, Assistant City Attorney
John Rickenbach
Mike Nunley
Ken Harris, Executive Officer RWQCB
Rick Koon, Cayucos Sanitary District General Manager
Tim Carmel, Cayucos Sanitary District Counsel

Rob Livick - RE: Assessment of California Men's Colony (CMC) Waste Water Treatment Facility as a Regional Alternative for City of Morro Bay and Cayucos Sanitary District

From:	"Harris, Ken@Waterboards" <Ken.Harris@waterboards.ca.gov>
To:	Rob Livick <RLivick@morro-bay.ca.us>
Date:	9/18/2014 9:14 AM
Subject:	RE: Assessment of California Men's Colony (CMC) Waste Water Treatment Facility as a Regional Alternative for City of Morro Bay and Cayucos Sanitary District
CC:	David Buckingham <DBuckingham@morro-bay.ca.us>, "Edward Kreins <EKreins@...
Attachments:	image003.jpg; image004.jpg

Rob, I appreciate you picking up the ball and continue to move this effort forward. Harvey Packard will be calling you today to discuss timing and the possibility of using CMC SEP funds to pay for this work. As you know I strongly support regionalization of wastewater and drinking water facilities where ever possible.

I also want to make sure you are aware of funding not only for the wastewater components of this project, but the 1 percent loan funds available from the Division of Financial Services. The Regional Board would strong support your application(s) to fund this project. Thank you again for taking a leadership role on this important project.

http://www.waterboards.ca.gov/water_issues/programs/grants_loans/

Ken

Ken Harris
Executive Officer
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

Office Phone: 805.549.3140
Fax: 805.543.0397