STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF AUGUST 23, 2007
Prepared August 1, 2007

ITEM NUMBER: 3

SUBJECT: **Discussion of Seasonal Discharge to Carmel River Lagoon for Fish Habitat Augmentation**

KEY INFORMATION

Location:	Carmel, west of Highway 1, along the Carmel River
Discharge Type:	Disinfected tertiary recycled water from municipal WWTP
Current Flow Rate:	1.6 million gallons per day (MGD)
Design Capacity:	3.0 MGD
Disposal:	Discharge to Carmel River Lagoon habitat
Recycling:	Up to 1.8 MGD for golf course irrigation
Existing Order:	WDR Order No. R3-2003-026
This Action:	**Update and Discussion**

SUMMARY

Carmel River Lagoon stakeholders are advocating direct discharges of Carmel Area Wastewater District's (CAWD) excess disinfected tertiary recycled water to the Carmel River Lagoon in the spring and summer to augment steelhead trout rearing habitat. Central Coast Water Board staff, with the concurrence of CAWD, drafted a revised NPDES permit in January 2007, for CAWD that included a direct discharge of disinfected tertiary recycled water to the Carmel River Lagoon. Postponement of the revised permit at the request of CAWD until well after the summer resulted in increased pressure from the Carmel River Steelhead Association (CRSA) to authorize direct discharges this spring/summer because a dry year has resulted in low Carmel River summer flows and critical lagoon water levels. As part of the permit revision, Water Board staff evaluated currently available effluent data per the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy, or SIP). The SIP reasonable potential analysis resulted in required effluent limitations for the priority pollutants copper, nickel, zinc, cyanide, and mercury for the lagoon discharge. Data indicate CAWD will not be able to meet these limits with its existing treatment process. Consequently, CAWD indicated that it will not discharge to the lagoon as authorized under a modified or revised NPDES permit given discharges will likely result in effluent limit violations and mandatory minimum penalties per California Water Code section 13385. Water Board staff and the Carmel River Lagoon Technical Advisory Committee (CRLTAC) are currently evaluating ways to satisfy the California Environmental Quality Act (CEQA) in conjunction with considering a categorical exception of the effluent limitations per section 5.3 of the SIP for fishery management.

CAWD is currently modifying its secondary treatment system and upgrading its tertiary treatment system to improve facility operations and recycled water quality. The treatment facility improvements are tentatively scheduled for completion during spring/summer 2008 and are being conducted independent of the potential lagoon discharge. However, effluent data from the

upgraded facility may eliminate the need for effluent limits for some of the priority pollutants in question and will significantly reduce potential impacts to the lagoon as a result of nitrogen loading. Staff recommends waiting until treatment facility upgrades are complete to collect data necessary to establish appropriate effluent limitations and conduct a proper CEQA evaluation for a lagoon discharge.

BACKGROUND & DISCUSSION

The Carmel River and Carmel Valley Aquifer are the primary water supply sources for Carmel and other Monterey Peninsula communities. Excessive diversion of Carmel River water and pumping of the Carmel Valley Aquifer has reduced the base flow of the Carmel River, which has decreased fresh water flow into the Carmel River Lagoon during the dry season. The Carmel River and Lagoon are steelhead trout habitat. During exceptionally dry years the lack of fresh water inputs to the lagoon results in increased salinity within the lagoon that may adversely affect steelhead rearing habitat.

California American Water Company (Cal-Am) diverts surface flow from the Carmel River at San Clemente and Los Padres Dams and pumps water from the Carmel Valley Aquifer for potable use within Carmel and Monterey Peninsula communities. Cal-Am is under order from State Water Resources Control Board (Order No. 95-10, a Water Rights order), to reduce its diversion of water from the Carmel River as well as conduct studies and implement mitigation measures to address habitat impacts and offset potable water usage.

In 1981 the Monterey Peninsula Water Management District (MPWMD) established an annual Water Allocation Program for each of its jurisdictional areas, including the Carmel Valley. In 1990, a Water Allocation Program Environmental Impact Report (EIR) was completed and certified by MPWMD which included a mitigation program for the Carmel River. One of the measures identified to mitigate lagoon vegetation and wildlife impacts is to "identify feasible alternatives to maintain adequate lagoon volume." Order No. 95-10 requires Cal-Am to implement all measures in the MPWMD Water Allocation Program EIR not implemented by MPWMD.

The CAWD facility treats approximately 1.6 MGD of wastewater from Carmel and Pebble Beach. All wastewater receives advanced secondary treatment. The majority of wastewater is then treated to Title 22 "disinfected tertiary recycled water standard" and is utilized primarily for irrigation of several golf courses owned by the Pebble Beach Company. That wastewater which is not recycled is discharged by outfall to Carmel Bay (Pacific Ocean). Approximately, five acre-feet/day (1.5 MGD) of tertiary treated recycled water is available for approximately four days per month during May through September, when the Pebble Beach Company flushes its golf courses (to flush salts from the root zone) with a higher quality potable supply. Normally, all or a portion of this excess water would be treated to advanced secondary effluent standards and discharged to the ocean, depending on the level of water in the recycled water storage reservoir at the time of flushing. CAWD is willing to make the excess water available for lagoon habitat augmentation given the staff time and costs of necessary evaluations, permitting and infrastructure are carried by another entity and not by CAWD or its rate payers. CAWD has already invested a significant amount of time and money on this potential project and does not feel any additional costs to its rate payers are appropriate given other entities are responsible for mitigating lagoon impacts.

Since prior to 2003, Carmel River Lagoon stakeholders, CAWD and Central Coast Water Board staff have been discussing the use of excess recycled water to augment fresh water inputs to the Carmel River Lagoon to improve the steelhead trout rearing habitat during critical summer Carmel River low flow stages. Increased inputs of fresh water to the lagoon habitat during exceptionally dry

years will potentially reduce adverse impacts to steelhead smolt as a result of increased salinity. In response to stakeholder pressure and a CAWD request on July 16, 2004, the Executive Officer administratively approved the discharge of disinfected tertiary recycled water to portions of the adjacent [dry] lagoon habitat on July 23, 2004. Land discharges to the adjacent lagoon habitat are intended to augment freshwater inputs to the lagoon via percolation. CAWD has implemented lagoon habitat discharges on several occasions during flushing cycles since the summer of 2004 in response to stakeholder requests. However, CAWD is limited to sporadic discharges of approximately two hours in duration before saturated soil conditions result in potential surface water discharges to the lagoon. Surface water discharges are prohibited without an NPDES permit. This significantly reduces CAWD's ability to discharge disinfected tertiary recycled water to augment the lagoon.

To address this, Water Board staff drafted a revised NPDES permit for CAWD in January 2007 that included prohibitions, effluent limitations, specifications, and provisions for a direct discharge to the Carmel River Lagoon. The addition of the lagoon discharge was based on verbal communication between CAWD and Water Board staff – no formal application, supporting information, or specific water quality data were submitted. The evaluation of effluent limitations per the SIP for the lagoon discharge given currently available effluent data results in effluent limits for copper, nickel, zinc, and cyanide based on protection of aquatic life criteria, and mercury based on a protection of human health criterion. These effluent limitations are based on secondary effluent data as no tertiary effluent data were available when the SIP reasonable potential analysis was conducted. It is assumed that only slight reductions in the effluent concentrations of these constituents will be achieved via the existing tertiary sand filters, as these constituents are primarily within the dissolved phase. Comparison of the resultant effluent limitations with the last five years of CAWD's annual priority pollutant effluent data indicates lagoon discharges will result in both chronic[1] and serious violations[2] for these constituents. Each of these violations is subject to a mandatory minimum penalty of $3,000. Consequently, CAWD would potentially be subject to $15,000 of mandatory minimum penalties per discharge event. CAWD has indicated that it will not discharge to the lagoon if it will result in violations and mandatory minimum penalties.

CAWD's existing permit expired on March 22, 2007, and was administratively extended on May 4, 2007, to allow the ongoing secondary discharge to Carmel Bay (Pacific Ocean) via their ocean outfall. The January 2007 draft revised NPDES permit was originally scheduled for the May 11, 2007 Water Board hearing, but was postponed per CAWD's request. CAWD requested postponement until December 7, 2007, pending restructuring of the Central Coast Long-Term Environmental Assessment Network (CCLEAN) program. The CCLEAN program, now in its seventh year, is currently undergoing its five year review to, in part, evaluate participating dischargers' future monitoring activities. CAWD has requested that its revised permit be consistent with the forthcoming CCLEAN program modifications.

Coming into another dry year with the prospect of a permitted discharge being postponed until December, CRSA stepped up its efforts this April in support of a direct discharge. The other primary stakeholders, most notably MPWMD, California Department of Parks and Recreation (State Parks), California Department of Fish and Game, NOAA Fisheries, US Fish and Wildlife Service, and Cal-Am, were not engaged in this matter until they were involved by Water Board staff in early June via discussion with the Carmel River Lagoon Technical Advisory Committee (CRLTAC). Water Board staff is currently working with the CRLTAC to evaluate the requirements of a categorical exception

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[1] four or more violations in a six month period; the first three violations not subject to minimum mandatory penalties [per section 13385 (i) (1) of the Water Code]

[2] exceedence of an effluent limitation for a Group pollutant by 20% or more [per section 13385 (h) (1) and (2) of the Water Code]

of the priority pollutant effluent limitations. Section 5.3 of the SIP allows short-term or seasonal categorical exceptions of priority pollutant effluent limitations for fishery management conducted by a public entity to fulfill statutory requirements. The primary condition and application requirement for the exception is compliance with CEQA. Water Board staff conducted an initial review of available data and determined additional effluent and receiving water data are needed to adequately evaluate potential impacts as a result of disinfected tertiary recycled water discharges to the lagoon, as required by CEQA. Subsequently, Water Board staff is currently working with CRLTAC to determine additional data needs.

State Parks, in coordination with the CRLTAC, has developed an internal draft Carmel River Lagoon Water Elevation Adaptive Management Project and associated CEQA document, which lists tertiary discharges as an available management tool/action for augmenting freshwater inputs to the lagoon. These draft documents are currently being used as internal CRLTAC guidance documents to evaluate the many complex lagoon management strategies. The primary focus of the documents is beach barrier modifications associated with flood control issues. The CRLTAC draft CEQA document for this project would be the logical vehicle for meeting the SIP exception CEQA requirement, but would require modifications to specifically address the lagoon discharge, potential impacts, and priority pollutant effluent limitations exception. However, it is uncertain if and when these documents will become more than internal guidance documents. The MPWMD Water Allocation Program EIR would also be an appropriate CEQA vehicle, but MPWMD appears to be unwilling to amend it due to stakeholder contention over water allocations. Nonetheless, the CRLTAC, or one of its member agencies, particularly State Parks, MPWMD or Cal-Am, appear to be an appropriate responsible entity to submit a discharge application and SIP exception request because of the nexus to their existing or draft programs for mitigating or managing fresh water inputs to the Carmel River Lagoon and Order No. 95-10.

CAWD is currently implementing upgrades to the secondary treatment system to facilitate denitrification and is replacing its tertiary sand filters with microfiltration and reverse osmosis (MF/RO) units. Upgrades are tentatively scheduled for completion spring/summer 2008. In the absence of secondary effluent data for nitrogen constituents, staff assumes that the existing effluent nitrogen consists primarily of nitrate at concentrations of up to 20 milligrams per liter (mg/L) as would be consistent for an activated sludge treatment system not designed for denitrification. The addition of denitrification will likely reduce effluent nitrate (and total nitrogen) to levels of 5 mg/L or lower. Denitrification will significantly reduce potential toxicity and algal impacts to the lagoon in the event of direct discharges. Although significant reductions in effluent priority pollutant concentrations are not anticipated with the addition of the MF/RO system, slight reductions may result in more favorable effluent limitations and will reduce the overall loading to the lagoon.

RECOMMENDATION

Staff is in full support of the discharge concept, but a SIP exception and CEQA analysis are necessary for CAWD to discharge. Staff recommends waiting until treatment facility upgrades are complete to collect data necessary to reevaluate priority pollutant effluent limitations per the SIP and conduct a CEQA evaluation for the SIP exception. As such, Water Board staff recommends removing the lagoon discharge from the December 2007 draft NPDES permit pending a formal application for the discharge from a responsible entity, including supporting effluent and receiving water data and a categorical exception request per the SIP provisions. The CAWD permit can then be reopened at a later date with CAWD's approval to include the lagoon discharge. In the meantime, Water Board staff will continue working with CAWD and the CRLTAC to facilitate ongoing discharges to the adjacent lagoon habitat or other appropriate alternatives, while evaluating the requirements for a direct discharge application.