

**MONTEREY PENINSULA WATER MANAGEMENT DISTRICT
CARMEL RIVER ADVISORY COMMITTEE
January 26, 2012**

1. CALL TO ORDER/ROLL CALL

2. PUBLIC COMMENT - Anyone wishing to address the Committee on a matter not listed on the agenda may do so during Public Comment.

3. CONSENT CALENDAR

A. Minutes from the October 27, 2011 Regular Meeting of the Carmel River Advisory Committee Regular Meeting are attached as **Exhibit A**.

ACTION REQUIRED: The Consent Calendar contains routine items that will be approved or accepted upon ratification of the Consent Calendar. A Committee member may request that a Consent Calendar item be considered separately by the Committee.

4. UPDATE AND DISCUSSION ON CARMEL RIVER WATERSHED ACTIVITIES

BACKGROUND: This is a regular agenda item. Lorin Letendre, President of the Carmel River Watershed Conservancy (CRWC), will update the Committee about CRWC activities.

RECOMMENDATION: No action is required. This is a discussion item.

5. DISCUSSION OF LOS PADRES DAM AND RESERVOIR

BACKGROUND: Los Padres Dam and Reservoir lie approximately 25 miles upstream of the Pacific Ocean and the reservoir provides the only significant surface storage in the Carmel River watershed. Recently, there has been renewed interest in this dam and reservoir for the following reasons:

- NOAA Fisheries, the California Department of Fish and Game (CDFG), California American Water (Cal-Am), and MPWMD are cooperating to design plans and construct passage improvements at the dam for downstream steelhead migrants (smolts and adults);
- The reservoir has lost more than 40% of its storage capacity to siltation since 1948; Cal-Am has proposed completing a feasibility study in 2012 for dredging sediment out of the reservoir;
- Beginning in 2017, the Monterey Peninsula is facing a significant cutback in the amount of water that can be diverted from the Carmel River; MPWMD would like to evaluate the potential for increasing the water supply by expanding storage at the reservoir;
- NOAA Fisheries is encouraging Cal-Am to study the feasibility of removing Los Padres Dam to avoid impacts to both upstream and downstream steelhead migration;
- Significant channel degradation has occurred between Los Padres Dam and San Clemente Dam and in the river downstream of San Clemente Dam as a result of sediment starvation (entrapment of sediment from the upper watershed by both Los Padres and San Clemente Reservoirs);

The following is a brief listing of the status and current operation of the dam and reservoir and some of the associated issues:

Site Facilities:

- Dam and reservoir constructed in 1948 and 1949 by California Water and Telephone (Cal-Am predecessor) to supply water needs of the Monterey Peninsula;
- Located at River Mile 24.8, about 12 miles east of Carmel Valley Village;
- Embankment dam (earthfill) about 150 feet high; concrete spillway 18 feet high, 110 feet wide, 600 feet long (approximate dimensions);
- Spillway capacity estimated to be about 38,000 cubic feet per second (cfs) (flow to top of spillway);
- Maximum release through the dam is about 30 cfs;
- Contributing watershed drains a 44.8 square mile area that is partly National Forest and partly Ventana Wilderness;
- Original reservoir capacity was 3,030 acre-feet; current capacity has been reduced to 1,775 acre-feet due to siltation; 100% siltation is estimated to occur by year 2100 or earlier (based on historical rate);
- Reservoir surface area is about 55 acres at spillway elevation; maximum extent of reservoir inundation extends upstream to approximately the confluence with Danish Creek.

Operations:

- The reservoir normally fills and spills in fall/winter after several inches of rainfall (the only recorded exceptions to this since 1949 were during the 1976-77 drought and one year during the 1987-91 drought); after the reservoir fills, the watershed is considered to be in an “uncontrolled condition” – i.e., the reservoir provides no flood control for downstream properties;
- There are three fish ladders below the dam (one fully functional, one partially functional, one abandoned); Cal-Am operates a trap and truck operation to move steelhead upstream of the dam in winter; juvenile and adult steelhead migrate downstream over the spillway;
- Releases from storage are made to the Carmel River main stem once the level drops below the spillway; rediversion of flow occurs at Cal-Am owned municipal production wells downstream of San Clemente Dam, primarily between River Mile 3 and 8; releases are governed under a quarterly budget process set up by a Memorandum of Agreement between CDFG, Cal-Am, and MPWMD. NOAA Fisheries also participates in water budget decisions;
- Releases from storage during the dry season generally range from 5 to 15 cfs, depending on inflow conditions and water year type; the effect of the reservoir on water temperature in the river can be variable and result in raising or lowering the water temperature in the river by several degrees; releases during periods of very low storage can be both warmer than incoming river flow and anoxic (low or no dissolved oxygen);

Water Rights:

- SWRCB issued permit 7130A for Los Padres Dam in 1948; Cal-Am was licensed in 1985 (License 11866) to divert up to 3,030 acre-feet per annum (AFA) between October 1 of each year through May 31 of the following year; the right to divert was subsequently reduced to 2,179 AFA by SWRCB Order 95-10;
- SWRCB Permit 20808B – New Los Padres Dam – MPWMD currently holds rights to 18,674 AFA (note: this is junior to all other rights along the Carmel River);

Issues to consider:

- Los Padres Dam blocks upstream steelhead migration to approximately 50% of the spawning habitat in the Carmel River watershed; the long concrete dam spillway can injure, abraid, or stress fish that migrate downstream; releases from storage during times of poor water quality can degrade downstream aquatic life and in the worst case result in a fish kill (e.g., as occurred in 1981);
- In dry periods, releases from storage in the summer typically constitute more than 50% and up to 90% of the flow in the river downstream of Los Padres Dam; without releases from storage, it is estimated that the Carmel River could dry up or pool up in the lower 24 miles (to the confluence with Cachagua Creek) during very dry periods;
- The Sleepy Hollow Steelhead Rearing Facility, located a mile downstream of San Clemente Dam, is dependent on a flow of at least three cubic feet per second in the river in order to operate;
- Cal-Am's diversion right of 2,179 AFA at Los Padres Dam is a substantial portion of its 3,376 AFA of authorized rights to divert in the Carmel River; the right to divert at the dam was reduced from 3,030 AFA, which was the original storage capacity of the reservoir in 1948, to 2,179 AFA in 1995 (based on the estimated storage capacity at that time); if reservoir storage is not maintained, SWRCB could further reduce the right to divert to storage and to beneficial use in the future; a reduction in authorized Carmel River diversion rights would have a significant effect on the domestic water supply to the Monterey Peninsula;
- The upper watershed is steep and prone to episodes of erosion; periodic large wildfires can be followed by very wet periods with high rates of erosion; the dam and reservoir disconnect habitat and natural river functions between the upper and lower portions of the watershed; Los Padres Dam blocks movement of sediment and significant quantities of large wood into the lower river from the upper watershed and contributes to poor spawning habitat between San Clemente Dam and Los Padres Dam; the reservoir contains approximately two million cubic yards of sediment that would naturally have flowed into the lower river and to the Carmel River State Beach; channel degradation in the lower 16 miles of the river and lack of sand at the mouth of the river can be traced back in part to sediment retention in the two main stem reservoirs in addition to former sand and gravel mining operations in the lower river and at the Carmel River State Beach between the 1920s and 1970s;
- Recovering and maintaining storage capacity is likely to be expensive; existing facilities (dam, bridge, pipeline, roads) are more than 60 years old and may require maintenance; maintaining storage capacity would require an ongoing maintenance dredging program; there is limited area (~ 10 acres) near the site to store dredged sediment;
- Recovering or increasing winter storage by dredging could allow for increased diversions to municipal supply, increased summer releases in a portion of the river downstream, and more flexibility in controlling water quality during dry period releases; stockpiled gravel and cobble from a dredging program could be injected into the channel to improve spawning habitat downstream of Los Padres Dam; spawning gravel would eventually pass into the lower Carmel River and improve spawning habitat in that reach;
- Current Division of Safety of Dams standards require a dam to safely resist maximum credible seismic and flood forces; new procedures developed since 1948 for calculating a probable maximum flood (PMF) show that the dam spillway will not pass a PMF at a level equal to or less than the top of the spillway; modifications to the dam or reservoir may require improving the spillway to meet the new standard;
- Modifications to the dam or reservoir could trigger additional mitigation activities for potential impacts to steelhead, California red-legged frogs, wetlands, upland habitat, historical and cultural resources.

Stakeholders in the future of the dam and reservoir include: the current dam owner (Cal-Am); several local, state, and federal agencies including the District, the Resource Conservation District of Monterey County, CDFG, SWRCB, NOAA Fisheries, and the U.S. Fish and Wildlife Service; non-profit groups such as the Carmel River Steelhead Association, the Carmel River Watershed Conservancy, and the Planning and Conservation League; recreational users (boating, fishing, hiking); and research organizations such as the Watershed Institute at California State University Monterey Bay. In addition, the U.S. Forest Service (USFS) manages virtually all of the contributing watershed. USFS land management policies – particularly for fire management – can have a direct effect on the volume of sediment and large wood that enters the reservoir.

STAFF RECOMMENDATION: The Committee should consider whether to sponsor a community workshop to take input on the Los Padres Dam and Reservoir and its effect on water supply for the Monterey Peninsula and on the environment of the Carmel River. If the Committee chooses to hold a workshop, the following should be identified: stakeholders to be contacted; a time and place for a meeting; a meeting facilitator; and agenda items for discussion.

ACTION REQUIRED: This is a discussion item. The Committee may take input from the public on this item and take action as appropriate.

6. STAFF REPORTS - Staff will report on the following:

- a) Integrated Regional Water Management Planning (Hampson)
- b) Update on Carmel River Watershed Rainfall and Flow Conditions (Christensen)
- c) Report on Schulte Road Bridge Replacement Project (Hampson)

7. ITEMS TO BE PLACED ON FUTURE AGENDAS

Committee members should bring up any new business at this time to determine whether it should be included on a future meeting's agenda.

8. ADJOURNMENT