

COASTAL CONSERVANCY

Staff Recommendation

April 24, 2008

**SAN CLEMENTE DAM REMOVAL PROJECT DESIGN
AND PERMITTING ASSISTANCE**

File No. 07-004-02

Project Manager: Trish Chapman

RECOMMENDED ACTION: Authorization to disburse up to \$6,000,000 to develop final design plans and prepare permits for the San Clemente Dam Removal Project in Monterey County.

LOCATION: Carmel River Watershed, Monterey County

PROGRAM CATEGORY: Integrated Marine and Coastal Resources Protection

EXHIBITS

Exhibit 1: [Project Location Map](#)

Exhibit 2: [January 18, 2007 Executive Officer's Report](#)

Exhibit 3: [January 17, 2008 Executive Officer's Report](#)

Exhibit 4: [May 24, 2007 Staff Recommendation](#)

Exhibit 5: [Existing and Proposed Conditions Graphics](#)

Exhibit 6: [Memorandum of Understanding regarding Dam Removal and Conveyance of Real Property, San Clemente Dam, Carmel River, Monterey County, California](#)

Exhibit 7: [MPRPD letter](#)

Exhibit 8: [Letters of Support](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31220 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed six million dollars (\$6,000,000), of which half, up to three million dollars (\$3,000,000), will be contributed by California American Water, to prepare final design plans and prepare permits for the removal of San Clemente Dam on the Carmel River in Monterey County. Prior to the disbursement of any funds, the Executive Officer of the Conservancy (Executive Officer) shall

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approve the work plan, budget, and contractor for that work. The Conservancy further authorizes the Executive Officer to make the findings necessary for Department of Industrial Relations review of a Labor Compliance Program if needed for the project.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with Chapter 5.5 of Division 21 of the California Public Resources Code (Section 31220), regarding integrated marine and coastal resource enhancement.
2. The proposed project is consistent with applicable local watershed management plans and water quality control plans.
3. The proposed project is consistent with the Project Selection Criteria and Guidelines last updated by the Conservancy on September 20, 2007.”

PROJECT SUMMARY:

The proposed authorization would allow the Conservancy to disburse up to \$6,000,000 for preparation of final design plans and permitting assistance for the San Clemente Dam Removal Project on the Carmel River in Monterey County. California American Water (CAW) has agreed to contribute half of the project design and permitting costs (to be counted against its total project commitment of approximately \$50 million), based on the project Memorandum of Understanding, discussed below. The San Clemente Dam is owned and operated by CAW and no longer serves a water supply function. In the 1990s, the Department of Water Resources (DWR) Division of the Safety of Dams, determined the dam could fail in the event of a maximum flood or earthquake, thereby posing a significant threat to downstream lives and property.

San Clemente Dam is also a substantial barrier to the migration of steelhead trout. The National Marine Fisheries Service (NMFS) has consistently ranked the Carmel River as the most potentially viable steelhead watershed for recovery of the South-Central California Coast Distinct Population Segment¹ (S-CCC DPS), a federally-threatened subspecies. Between 1999 and 2005, steelhead counts at San Clemente Dam’s fish ladder ranged from approximately 400 to 800 fish per year, whereas historic returns to the river have been estimated to be as high as 12,000 to 20,000 adult fish. NMFS has stated that restoration of the Carmel River steelhead population is critical to the overall recovery of the S-CCC DPS. Removing San Clemente Dam would provide steelhead with unimpaired access to over 25 miles of spawning and rearing habitat and would reduce the stress on fish traveling further upstream beyond Los Padres Dam where there is over 18 miles of additional spawning and rearing habitat.

¹ The National Marine Fisheries Service and the U.S. Fish and Wildlife Service have adopted a joint policy for when a group of vertebrates will be considered a Distinct Population Segment (DPS) and thus a “species” under the Federal Endangered Species Act. Per this policy, for a group of vertebrates to be a DPS, it must be discrete from other populations as a consequence of physical, physiological, ecological, and behavioral factors; and it must be significant to its taxon.

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The dam removal project presents a unique opportunity to permanently solve the public safety threat of dam failure, enhance the biological connectivity of the river corridor, restore the natural sediment supply to the downstream watershed and beach, and restore an important steelhead river run. In addition, the project would protect and provide recreation on approximately 900 acres of watershed lands.

In 2007, DWR certified the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the San Clemente Dam Seismic Safety Project that evaluated five alternatives for addressing the safety issue, including Dam Strengthening and the Carmel River Reroute and Dam Removal (CRRDR or Reroute and Removal) option. As discussed in the January 18, 2007 and January 17, 2008 Executive Officer reports (Exhibits 2 and 3, respectively) and the May 24, 2007 staff recommendation (Exhibit 4), the Coastal Conservancy is leading the State's effort to develop a feasible strategy for implementing the Reroute and Removal project in cooperation with CAW and NOAA's National Marine Fisheries Service (NMFS).

Carmel River Reroute and Dam Removal Project

San Clemente Dam is located just downstream of the confluence of the Carmel River and San Clemente Creek. Upstream of the dam, the river and creek run parallel for about one-half mile, separated only by a narrow peninsula (Exhibit 5a). Most of the sediment that has accumulated behind the dam is located on the Carmel River side of the reservoir. These conditions offer a unique opportunity to remove the dam while minimizing the volume of accumulated sediment that must be excavated and moved.

To accomplish this, a half-mile reach of the Carmel River would be permanently bypassed and used as a sediment disposal area. To bypass the reach, a 450-foot-long channel would be cut through the narrow peninsula thereby connecting the Carmel River to San Clemente Creek, approximately 3,000 feet upstream of the dam (Exhibit 5b). The rock excavated from the bypass channel will be used to construct a dike that will permanently reroute the Carmel River into the San Clemente Creek drainage and seal off the upstream end of the abandoned reservoir. The accumulated sediment in the San Clemente Creek arm of the reservoir will be excavated and relocated to the abandoned reach of the Carmel River, and the sediment in the abandoned Carmel River arm will be stabilized in place. The half-mile reach of San Clemente Creek between the dam and the bypass channel will be restored to its 1921 elevation, and a series of step-pools will be created to aid fish passage. The project will also relocate the water supply diversion point above the bypass cut. When all project elements are in place, the dam will be removed.

Memorandum of Understanding

On January 31, 2008, the Conservancy, NMFS and CAW entered into a Memorandum of Understanding (MOU; Exhibit 6) that is a statement of intent outlining the major terms for cooperatively implementing the Reroute and Removal project. Key components of the MOU are summarized below:

- The Conservancy will contract for preparation of the final design and engineering plans for the project, as well as for preparation of permit applications. With the

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assistance of NMFS, the Conservancy will also coordinate with regulatory agencies to finalize permit conditions.

- CAW will manage the construction of the project, including hiring contractors.
- CAW will contribute an amount equivalent to the estimated cost of buttressing the dam, which is anticipated to be no less than \$50 million.
- The Conservancy, with the assistance of NMFS, will undertake to secure up to \$35 million from state, federal, and private foundation sources.
- The Conservancy and CAW will evenly divide the costs of final design and engineering, and permitting, which will be counted as part of each entity's contribution to the total project costs.
- CAW will convey to the Monterey Peninsula Regional Parks District (MPRPD) approximately 928 acres around and near the dam. MRPD indicated its interest in participating in the project in a letter to the Conservancy's Executive Officer dated January 9, 2008 (Exhibit 7).
- To the extent possible, project liabilities for both project design and construction will be borne by the project contractors. Both the Conservancy and CAW expect to be indemnified by project contractors and listed as additional insureds on contractor insurance policies. Conservancy staff are investigating additional options for addressing project liability.

Project Design, Permitting, and Environmental Compliance

The proposed action would enable the Conservancy to proceed with hiring contractors to develop the final design plans for the project and assist in securing the project permits, consistent with the MOU. These services may be performed jointly by one firm, or by two or more separate firms in a coordinated approach.

In conjunction with the EIR/EIS process under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), conceptual level engineering designs were prepared for all of the alternatives. These designs were used to evaluate potential impacts and estimate costs. Additional conceptual design work commissioned by the Conservancy was accomplished in fall-winter 2007-08, including advancing the restoration designs of San Clemente Creek and the Carmel River, and geotechnical investigations to confirm the feasibility of select project elements. The project design, as well as the design standards and criteria, were then summarized in a basis of conceptual design report. Under the proposed authorization, the Conservancy would hire consultants to conduct additional field investigations and engineering analyses, and then prepare more detailed engineering designs for the bypass project. Based on the detailed designs, the consultants will also prepare updated costs estimates. Other consultants may be retained to assist with appraisals, assessments, and implementation strategies.

The Conservancy anticipates that there will be minor changes to the project design from what was evaluated in the Final EIR/EIS, and this may require additional environmental review pursuant to either the California Environmental Quality Act or the National Environmental

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Policy Act. If additional environmental review is necessary, the Conservancy would also contract for assistance in preparing the appropriate environmental review document(s).

Implementation of the project will also require permits and approvals from multiple agencies including: the U.S. Army Corps of Engineers, NMFS, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Coast Regional Water Quality Control Board, State Historic Preservation Office, Monterey County, and the Monterey Peninsula Water Management District. Under the proposed authorization, the Conservancy would hire contractors to prepare the permit applications and supporting documentation and coordinate with the regulatory agencies to discuss and finalize permit conditions.

Schedule

Due to the safety hazard posed by San Clemente Dam, expeditious removal of the dam is a high priority for all involved. Therefore, the final design phase will be on an accelerated schedule. Barring unforeseen obstacles, project construction could begin in Spring 2009 and be completed by the end of 2011. If additional issues arise, the construction schedule would be expected to slip by one year. Staff anticipates returning to the Conservancy for authorization of construction funding in November 2008.

Site Description: San Clemente Dam is a 106-foot-high concrete arch dam located approximately 18.5 miles from the Pacific Ocean on the Carmel River. The dam is located just downstream of the confluence of the Carmel River and San Clemente Creek. When the dam was constructed in 1921, it had a reservoir storage capacity of approximately 1,425 acre-feet. Today the reservoir has been filled by more than 2.5 million cubic yards of sediment, leaving a reservoir storage capacity of approximately 125 acre-feet. At this point, the sole function of the dam is to provide a diversion point for water withdrawals from the river. The dam is owned and operated by CAW, an investor-owned water utility that is regulated by the California Public Utilities Commission (PUC). CAW provides public water service to the Monterey Peninsula. The land adjacent to the dam and reservoir is largely undeveloped, consisting of steep slopes covered with dense chaparral and oak woodland. The nearest residential development, the Sleepy Hollow subdivision, is located approximately one mile downstream from the dam.

Project History: In the early 1990s, the California Department of Water Resources (DWR) Division of the Safety of Dams (DSOD) determined that San Clemente Dam could potentially fail in the event of either the maximum credible earthquake or probable maximum flood. As a result, DSOD instructed CAW to develop a project to address this safety issue. CAW funded multiple studies which evaluated options for strengthening, notching, or removing the dam. In August 2000, the Conservancy authorized a \$50,000 grant to the Institute for Fisheries Resources (IFR) to evaluate additional alternatives for modifying or removing the dam in order to improve fish passage and habitat conditions. This grant was later augmented by \$65,300. IFR evaluated several options for removing the sediment accumulated behind the dam. All of these options were eventually deemed infeasible due to downstream flooding, habitat, and/or transportation-related impacts.

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Ultimately, CAW submitted a proposal to buttress the dam in place. This decision was driven primarily by the fact that it was the most economical way to address the safety issues. Over the past few years, Coastal Conservancy staff, in cooperation with the NMFS and the Planning and Conservation League Foundation (PCLF) have been working with CAW to develop an alternative under which public agencies would collaborate with CAW to remove the dam. In May 2004, the Conservancy authorized \$500,000 for technical studies to further evaluate the feasibility of the Reroute and Removal project. These studies culminated in the conclusion that dam removal is feasible, and led to the MOU discussed in the Project Summary section.

PROJECT FINANCING:

Coastal Conservancy	\$6,000,000
Total Cost of Authorization	\$6,000,000
Less California American Water contribution	\$3,000,000
Net Cost to Conservancy	\$3,000,000

The expected source for the Conservancy funds for this project is an appropriation to the Conservancy from the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84). Proposition 84 authorizes the Conservancy’s use of these funds for the purposes of protecting beaches, bays, coastal waters and coastal watersheds, and the natural habitat values of coastal waters and lands through projects undertaken pursuant to the Conservancy’s enabling legislation (Division 21 of the Public Resources Code). Section 75060(e) of the Public Resources Code specifically allocates Conservancy funding for Monterey Bay and its watersheds, which is defined in Section 75072.5 to include the Carmel River watershed. The proposed project will remove a major fish passage barrier on the Carmel River, and restore river processes and the ecological connectivity of the river’s aquatic and riparian habitats. The proposed project is consistent with the Conservancy’s enabling legislation, as discussed in the “Consistency with Conservancy’s enabling legislation” section below. The proposed authorization is thus consistent with the funding requirements of Proposition 84.

Proposition 84 also requires that for potential projects that include acquisition or restoration for the purpose of protect natural resources protection, the Conservancy give priority to potential projects that meet one or more of the criteria specified in Section 75071. The proposed project satisfies the following specified criteria: 1) Landscape/habitat linkage – the project will link existing protected habitat areas because the property donated by CAW to MPRPD will create a link between Garland Park and the San Clemente Open Space area, both of which are owned and managed by MPRPD; 2) Watershed protection – the project will contribute to long-term watershed protection by restoring the ecological processes and connectivity of the Carmel River and by restricting the uses of the donated property for watershed conservation and compatible public access; and 3) Non-state matching contribution – CAW will provide 50% of the costs of the final design and permitting phases and will ultimately provide more than half of the project costs.

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The schedule and procedure for receiving CAW contribution has not yet been resolved; however, staff anticipates that CAW contributions would be deposited in the Coastal Conservancy's Coastal Trust Fund in a special project fund established specifically for this project.

Total project costs, including final design, permitting, project construction and mitigation, are currently estimated at \$83 million. This number includes both a 10% add-on for “unidentified items” and a 25% contingency. CAW would contribute approximately \$49 million to the project, and an additional \$34 million would be raised from state, federal, and private foundation sources (collectively, the public funders). Staff have received informal funding commitments from the Resources Agency, Department of Fish and Game, and Wildlife Conservation Board for project funding, and will be developing a more formal funding arrangement over the next few months. If in-kind assistance on project construction is secured from the Department of Defense's Innovative Readiness Training (IRT) Program, then this would reduce the cash contribution required from the public funders. Based on current cost estimates, staff anticipate that through this authorization and future authorizations, the Conservancy would be asked to contribute a total of \$7 million to the project.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

This project would be undertaken pursuant to the Conservancy's enabling legislation, Division 21 of the Public Resources Code; in particular Chapter 5.5 (Public Resources Code Sections 31220), regarding integrated coastal and marine resources protection.

Section 31220(a) of the PRC authorizes the Conservancy to undertake coastal watershed projects that meet one or more criteria of Section 31220(b). Consistent with Section 31220(b), the proposed project will achieve the following objectives: 2) protect and restore fish and wildlife habitat within coastal and marine waters and coastal watersheds; 3) reduce threats to coastal and marine fish and wildlife; 4) reduce unnatural erosion and sedimentation of coastal watersheds or contribute to the reestablishment of natural erosion and sediment cycles; and 6) acquire, protect, and restore coastal wetlands, riparian areas, floodplains, and other sensitive watershed lands, including watershed lands draining to sensitive coastal or marine areas. Consistent with Section 31220(a), Conservancy staff have consulted with the State Water Quality Control Board in developing this project.

As Section 31220(c) requires, the proposed project is consistent with local and state watershed plans. This is discussed in detail below under “Consistency With Local Watershed Management Plan/State Water Quality Control Plan.” Section 31220(c) also requires that projects include a monitoring and evaluation component. Extensive monitoring and evaluation will be integrated into the design of the dam removal project.

Section 31111 gives the Conservancy the authority to undertake plans and feasibility studies in order to implement the purposes of Division 21.

CONSISTENCY WITH CONSERVANCY'S STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 5 Objectives A and B**, the proposed project will facilitate restoration of watershed processes in the Carmel River and improved access to over 43 miles of spawning and

rearing habitat for steelhead trout. Removal of San Clemente Dam will also restore the aquatic and riparian habitat corridor along the river.

Consistent with **Goal 6 Objectives A and C**, the proposed project will develop a plan for restoring a coastal watershed. Removing the dam will provide increased access to spawning and rearing habitat for steelhead trout, restore the natural sediment supply to downstream reaches, and increase the biological connectivity of the river.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines last updated on September 20, 2007, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section, above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section, above.
3. **Support of the public:** Removal of San Clemente Dam has broad support from federal, state and local agencies, environmental and community groups, including State Senator Abel Maldonado, NMFS, PCLF, the Carmel River Steelhead Association, and the Carmel River Watershed Conservancy. Support letters are provided in Exhibit 8.
4. **Location:** The project area is located on the Carmel River approximately 18.5 miles from the ocean. The San Clemente Dam Removal Project will benefit coastal resources by improving access to spawning and rearing habitat for steelhead trout, an anadromous fish that spends part of its life in the ocean.
5. **Need:** The Coastal Conservancy has been asked to lead the State's effort to facilitate removal of the dam. There is no local agency with the capacity to take the lead on a project of this size and complexity. Therefore, the Conservancy's involvement is necessary to removing the dam.
6. **Greater-than-local interest:** Restoration of the Carmel River watershed is critical to the recovery of the federally-threatened South-Central California Coast steelhead population. Removal of San Clemente Dam will significantly increase access to spawning and rearing habitat and thus is an important step in the recovery process.

Additional Criteria

7. **Urgency:** Due to the unsafe condition of the dam, DWR requires that remedial action be taken soon, If the dam can not be removed expeditiously, DWR will require CAW to proceed with buttressing the dam.
8. **Resolution of more than one issue:** Removal of San Clemente Dam will permanently resolve the public safety issue posed by the dam and will also improve access to habitat for

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steelhead trout and restore the natural sediment supply to the lower Carmel River and Carmel beach.

9. **Conflict resolution:** Efforts to address the safety issues at San Clemente Dam have been stalled for several years due to concerns that buttressing the dam would perpetuate significant impacts to the Carmel River ecosystem and specifically steelhead trout, but that removing the dam would be costly to CAW's ratepayers. The proposed project involves a public-private cooperative approach to removing the dam that resolves this conflict.
10. **Readiness:** The Conservancy is ready to move forward with the design and permitting phase as soon as the funding is available.
11. **Cooperation:** The San Clemente Dam Removal Project is a cooperative effort of a private company, state and federal agencies, and several nonprofit organizations. It has the potential to demonstrate how cooperation between the public and private sectors can lead to an outcome that is fair and cost-effective for all involved and achieve greater public benefits than would result from any of the participants working alone through a regulatory solution.

CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:

In the Carmel Area Land Use Plan of Monterey County's certified Local Coastal Program, policy 2.3.2 for Environmentally Sensitive Habitat states that "the environmentally sensitive habitats of the Carmel Coastal Segment are unique, limited and fragile resources of statewide significance, important to the enrichment of present and future generations of County residents and visitors; accordingly, they shall be protected, maintained and, where possible, enhanced and restored." The definition in the LCP of environmentally sensitive habitats includes habitat for rare and endangered species. The proposed project will facilitate improved access to spawning and rearing habitat for steelhead trout, a federally-listed species.

CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/ STATE WATER QUALITY CONTROL PLAN:

Projects undertaken pursuant to Chapter 5.5 of Public Resources Code Division 21 (Section 31220) must be consistent with the following if available and relevant: Integrated Watershed Resource Management Programs (IWRMP); local watershed management plans; and water quality control plans, adopted by the state and regional water boards. The Monterey Peninsula IWRMP was completed in November 2007 and includes the Carmel River. Removal of San Clemente Dam is consistent with IWRMP Section 4.1 Environmental Enhancement goal to "preserve the environmental wealth and wellbeing of the Region's watersheds by taking advantage of opportunities to assess, restore and enhance natural resources of streams and watershed areas when developing water supply, water quality, and flood protection strategies." The project is also consistent with specific Environmental Enhancement objectives cited in Section 4.3 of the IWRMP that call for protecting and enhancing "sensitive species and their habitats in the Carmel River watershed" and identifying "opportunities to protect, enhance, or restore habitat in conjunction with water supply, water quality, or flood protection projects."

The Water Quality Control Plan for the Central Coastal Basin adopted by the Regional Water Quality Control Board in 1994 designates several beneficial use objectives for the Carmel River. The removal of San Clemente Dam will facilitate the restoration of fish and wildlife habitat

thereby furthering the following designated beneficial uses for the Carmel River: cold fresh water habitat, wildlife habitat; rare, threatened or endangered species; migration of aquatic organisms; and spawning habitat (Table 2.1 of Basin Plan).

COMPLIANCE WITH CEQA:

The proposed authorization is statutorily exempt from the California Environmental Quality Act (CEQA), pursuant to 14 Cal. Code of Regulations Section 15262. Consistent with §15262, the authorization will involve only preparation of planning studies and feasibility studies for possible future actions which the Conservancy has not approved, adopted, or funded. Consistent with this section, the studies will consider environmental factors. The authorization is also categorically exempt from CEQA, pursuant to 14 Cal. Code of Regulations Section 15306. Consistent with this section, development of the project designs may require basic data collection and resource evaluation activities which will not result in a serious or major disturbance to an environmental resource. These activities will be undertaken as part of a study leading to an action which the Conservancy has not yet approved, adopted, or funded. Upon approval, staff will file a Notice of Exemption for this project.