CALIFORNIA OCEAN PROTECTION COUNCIL

Staff Recommendation
September 23, 2005

Matilija Dam Ecosystem Restoration Program
Engineering Plans and Designs Project

Developed By: Neal Fishman/Carol Arnold

RECOMMENDED ACTION: Consideration of the Matilija Dam Ecosystem Restoration Program, and possible: 1) determination that it is a high priority project, and 2) authorization for the Council's Secretary to take actions needed to provide for final engineering designs, plans and specifications for the project, including the allocation of up to $2,000,000 of State funds reserved for ocean protection and needed to match federal funding for the project.

OCEAN or COASTAL LOCATION: The Matilija Dam is located approximately 16 miles from the Pacific Ocean on Matilija Creek, a tributary of the Ventura River which enters the ocean within the jurisdiction of the City of Ventura, Ventura County, California.

AGENCY OR ENTITY RECOMMENDING PROJECT: State Coastal Conservancy

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EXHIBITS

Exhibit 1: Project Location and Site Maps

Exhibit 2: Letters of Support

RESOLUTION:

"The Ocean Protection Council finds pursuant to Sections 35600, *et seq.* of the Public Resources Code that the Matilija Dam Ecosystem Restoration Program Engineering Plans and Design Project as herein described, is of high priority for ocean conservation and authorizes the Secretary to take actions necessary for its planning or implementation, including the allocation of up to $2,000,000 of State funds appropriated to the Coastal Conservancy or other departments, and reserved for ocean protection."

PROJECT DESCRIPTION:

Staff is recommending that the Ocean Protection Council find that the Matilija Dam Ecosystem Restoration Program is a high priority project, and that it authorize the Council's Secretary to take actions needed to complete engineering designs, plans and specifications including the allocation of up to $2,000,000 of funds earmarked for ocean protection. This is expected to include up to $400,000 of tidelands oil funds appropriated by the Legislature for ocean

protection with the remainder coming from bond funds appropriated to the Coastal Conservancy and other State departments, and reserved by these entities for ocean protection purposes.

When implemented, the Matilija Dam Ecosystem Restoration Program will result in significantly improved habitat for fish and wildlife, both within the Ventura River and watershed and the ocean offshore, as well as an increased sand supply for Ventura County beaches. The cornerstone of the project will be the removal of the Matilija Dam, a 190 foot high concrete barrier built in 1947. The Dam is a major impediment to the federally endangered southern steelhead during its spawning cycle. Additionally, the upstream reservoir has filled with sediment and no longer provides sufficient water storage to justify the retention of the Dam. Sediment flows downstream are insufficient to provide a continual supply of sand to replenish beaches near the mouth of the river.

The primary focus of this project is the restoration of the federally endangered southern steelhead trout. Steelhead are an ocean-going salmonid, spending a portion of their lives in freshwater rivers and streams to spawn, providing juvenile fish an opportunity to grow to a size sufficient to support ocean survival. Removal of the Dam and the opening of the upper reaches of the watershed to these anadromous fish will create conditions that could result in the recovery of the species and potential removal from the state and federal endangered species list. It will also enable other fish and wildlife species to exploit habitats unavailable to them for many years.

In addition to the barrier to fish migration caused by the Dam, alluvial floodplains downstream have diminished drastically, the product of a changed flow regime and a reduced sediment supply. This has resulted in a depleted sand budget and eroded beaches at the mouth of the river and the coast. Removal of the Dam will return the river to more natural conditions, increasing sediment flow downstream, creating alluvial floodplain habitat and replenishing ocean beaches.

The feasibility phase of this project was recently completed. It involved an active coalition consisting of a diverse set up public and private partners including the Army Corps of Engineers, the U.S. Bureau of Reclamation, U.S. Geological Survey, Coastal Conservancy, National Marine Fisheries Service, Department of Fish and Game, Ventura County Watershed Protection District, the Matilija Coalition consisting of a number of non-governmental organizations, and the Institute for Fisheries Resources. The Corps of Engineers recently honored the collaborative process that led to the completed feasibility study, preferred design, and completed EIR/EIS as its top design team nationally for 2004.

This phase of the project is the engineering design phase. It is labeled by the COE as the "Pre-Construction, Engineering and Design" (PED) phase, and is separated into several components. These are:

1. **General Detailed Design Report (GDDR):** A design report (referred to by the COE as a General Detailed Design Report) will be prepared that addresses additional modeling, environmental and general design needs for the Matilija Dam Ecosystem Restoration Program. Numerous issues will be addressed in this phase, the most significant of which is the further analysis of sediment transport potential and impacts, particularly as related to ecosystem benefits, induced flood damage and

impacts to water supply and quality. The purpose of the GDDR is to provide documentation for those features of the overall project not specifically limited to one of the projects described below.

2. **Feature-specific Detailed Design Reports (DDRs):** Feature specific design reports (referred to by the COE as a Feature-Specific Detailed Design Report) and plans and specifications will be prepared for five project components, as follows:

   a. **Foster Park Wells:** Two groundwater wells will be constructed at Foster Park to reduce impacts to the water supply facilities in this area that will result from increased sediment flows downstream of the dam.
   b. **Levees and Floodwalls for Meiners Oaks, Live Oak and Casitas Springs:** Levees will be modified or constructed in these areas to provide additional flood protection downstream of the dam.
   c. **Santa Ana and Camino Cielo Bridge Modifications:** The Santa Ana Bridge will be widened and extended and an old bridge will be demolished and a new one constructed to provide additional flood protection downstream of the dam.
   d. **Robles Diversion Dam High Flow Bypass:** The Robles Diversion Dam will be modified to include a high-flow bypass for the purpose of allowing sediment to move beyond the Robles Diversion, preserving the ability to divert water to the Casitas Reservoir and keeping intact the ability of fish to use a new fish passage structure.
   e. **Dam and Sediment Removal and Recreation:** Following relocation of sensitive species and removal of non-native plants, fine sediment deposited beneath the reservoir will be slurried to downstream disposal sites using water imported from another site. The Dam will be removed concurrent with fine sediment removal. A channel will be constructed through coarser sediments behind the Dam. Excavated sediments will be stockpiled upstream. Slope protection will be provided to permit a controlled rate of erosion. Downstream disposal sites will be revegetated using native plants. Hiking trails and a multi-use trail will be constructed along the slurry pipeline and access road.

The COE and the District expect that the design phase of the project will be completed in three years, with some elements taking less than that, at an approximate cost of $8,000,000. The District and COE estimate that full implementation of the Matilija Dam Ecosystem Restoration Program will be completed by the end of 2012 and that the river system will reach a state of equilibrium resembling its pre-Dam condition by 2020.

This project is one of the largest dam removal projects in the country, and one of the largest ecosystem restoration efforts ever undertaken by the COE west of the Mississippi River. When the project is fully implemented, the Ventura River watershed, and related estuarine and ocean habitats offshore, will more closely resemble historic conditions.

As a large federal agency, the COE is fully capable of undertaking an ecosystem restoration project of this scale, and the District is experienced at providing the necessary local leadership. The expected cost of the construction phase is approximately $130,000,000, with the COE providing sixty five percent of the project costs using funds authorized by Congress under the

Water Resources Development Act (WRDA). Additionally, other agencies such as the Bureau of Reclamation, Department of Fish & Game and the U.S. Fish & Wildlife Service will be actively involved providing a full range of expertise toward implementation.

PROJECT FINANCING

Possible Funding Sources:

Ocean Protection Council (Tidelands)	$400,000
Coastal Conservancy	$600,000
Other State or Local Sources	$1,000,000
Army Corps or other federal Sources	$6,000,000
Total Project Cost	**$8,000,000**

If supported by the Council, Conservancy staff will recommend a grant of $1,000,000 to the District for consideration at the Conservancy's next public meeting in October 2005. Staff anticipates using $400,000 of tidelands oil revenues appropriated to the Resources Agency for ocean protection purposes and $600,000 in proposition 40 or 50 funds appropriated to the Conservancy and reserved for Ocean Protection purposes. The COE will provide $6,000,000 toward this phase of the project. The President's budget for 2006 proposes $800,000 of this amount. The Conservancy and the District will actively pursue funding sources to fill the $1,000,000 gap in State funds needed to match the overall federal contribution. This may include a combination of local and State funds. The additional federal funds will be appropriated on a yearly basis over the next two to three years.

CONSISTENCY WITH CALIFORNIA'S OCEAN ACTION STRATEGY: The proposed project is consistent with action item 10 in that it increases efforts to pursue, support and implement coordinated ecosystem management approaches at the federal, state and local levels to guide and improve stewardship of ocean and coastal resources. It is also consistent with action item 12 in that it addresses restoration of threatened habitats, water quality issues and impacts from development.

CONSISTENCY WITH OCEAN PROTECTION COUNCIL'S PROJECT SELECTION CRITERIA & GUIDELINES:

<u>Mandatory Criteria</u>

1. **Furthers the following statutory purposes and policies of the Ocean Protection Act:**
   - **Improves management, conservation, and protection of coastal waters and ocean ecosystems:** Removal of Matilija Dam will restore sediment flows from the Ventura River Watershed to more closely resemble historic conditions. It will open previously inaccessible spawning and rearing habitat to steelhead, a federally listed endangered species, which should result in increased populations of these anadromous fish.
   - **Encourages those activities and uses that are consistent with sustainable, long-term protection and conservation of ocean and coastal resources:** When completed, the

project will return the Ventura River to a more natural flow regime, allowing long-term sustainable conditions that will contribute to conservation of ocean and coastal habitats.

- **Promotes aesthetic, educational and recreational uses of the coast and ocean**: Removal of the Dam will recreate a natural landscape that will provide more scenic views and opportunities for educational and recreational uses. Additionally, increased sediment flows made possible by the removal of the Dam will contribute to beach protection in the coastal environment, enhancing coastal re recreation.
- **Improve monitoring, data gathering, and advances in scientific understanding of the ocean and coastal environment:** The project will advance the scientific understanding of the relationship between riverine systems and off shore habitat.
- **Improves the health of fish and fosters sustainable fisheries in ocean and coastal waters:** Removal of the Dam and restoration of habitat within the Ventura River Watershed will improve conditions for southern steelhead, a federally listed endangered species. These actions could result in the recovery the species.
- **Helps to coordinate the collection and sharing of scientific data:** Data gathered as the result of this project will be available for use in similar projects in the future.

2. **Consistent with the purposes of the funding source:** See Project Financing Section above.

3. **Has demonstrable support from the public:** State and federal legislators, federal, state and local agencies, non-governmental organizations and research institutions support the project. Letters of support are attached as Exhibit 2.

4. **Relates directly to the ocean, coast, associated estuaries, and coastal-draining watersheds:** The project will take place entirely within the Ventura River Watershed, a coastal-draining watershed. It will also have a positive impact on coastal and ocean resources.

5. **Has greater-than-local interest:** The primary goal of the project is to restore spawning runs and riverine habitat for the federally endangered southern steelhead trout. Removal of the Matilija Dam and the opening of the upper reaches of the Ventura River Watershed will create conditions that could result in the recovery of this species and its removal from the state and federal endangered species list.

<u>Additional Criteria</u>

1. **Helps implement the California Ocean and Coastal Information, Research, and Outreach Strategy and other priorities of local, state or federal advisory groups, or scientific or policy reports, adopted by the council**: See Consistency with California's Ocean Action Strategy above.

2. **The project has an element of urgency (there is an immediate threat to a coastal/ ocean resource from development or natural or economic conditions, a pressing need, or a fleeting opportunity):** The southern steelhead trout is a federally listed endangered species. Without actions within the near future to recover the species, it is very likely to become

extinct. Removal of the Matilija Dam has the potential to greatly increase the likelihood that the species will recover.

3. **The project helps resolve more than one issue:** Removal of the Matilija Dam and restoration of floodplain habitat will improve habitat for multiple sensitive species including the federally endangered southern steelhead trout. It will also increase sediment flows which will restore sandy sediment to coastal beaches.

4. **The project includes a contribution of funds or services by other entities:** The project will be funded by state, federal and local government entities.

5. **The project helps with conflict resolution**: Due to excessive sedimentation, the reservoir upstream of Matilija Dam does not serve as a significant source of water storage. Removal of the Dam and related projects address this issue, as well as related to habitat loss, endangered species protection, water quality, and beach erosion. Without State participation, the COE cannot spend federal dollars appropriated to implement this phase of the project.

6. **The project involves innovation (e.g. environmental or economic demonstration):** This project is the largest ecosystem restoration and dam removal project west of the Mississippi River. The project will be carried out using innovative techniques for removing and storing sediment, removing the Dam, and restoring floodplain habitat. As one of the few large dam removal projects in the country, this project will demonstrate the feasibility of this approach to salmonid restoration.

7. **The project is ready to implement (grantee or contractor will start and finish the project in a timely manner):** Development of final plans and specifications will begin as soon as funding is secured. The COE and the District have complied with all NEPA/CEQA requirements and a detailed work program has been developed. The engineering design phase of the project is expected to take approximately three years.

8. **The project involves a combination of local, state, or federal agencies or is a public/private partnership:** Since inception, planning for this project has been a joint effort between local, state and federal agencies. This partnership will continue during the development of final plans and specifications, and implementation.