



## MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

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5 HARRIS COURT, BLDG. G  
POST OFFICE BOX 85  
MONTEREY, CA 93942-0085 • (831) 658-5600  
FAX (831) 644-9560 • <http://www.mpwmd.dst.ca.us>

### MEMORANDUM

**DATE:** February 1, 2007  
**TO:** Carmel River Advisory Committee  
**FROM:** Larry Hampson, Water Resources Engineer  
**SUBJECT:** Packet for February 8, 2006 Committee Meeting

Enclosed is the meeting packet for the next meeting of the Committee, which will be held on:

**Thursday, February 8, 2007  
10:00 A.M.  
Mid-Carmel Valley Fire Station Community Room**

You may also download the meeting packet from the following website:

<http://www.mpwmd.dst.ca.us/programs/river/crac/cracinfo.htm>

For directions, contact Larry Hampson at the Carmel Valley field office at 659-2543 or by e-mail ([larry@mpwmd.dst.ca.us](mailto:larry@mpwmd.dst.ca.us)).

Enclosure



# MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

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## **Carmel River Advisory Committee Members**

John Dalessio, Chair  
Lawrence V. Levine,  
Vice Chair  
Thomas D. House, Jr.  
Susan Rogers  
Richard H. Rosenthal  
Clive Sanders  
Marjorie Ingram Viales

## **Public Comment**

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

## **DRAFT AGENDA CARMEL RIVER ADVISORY COMMITTEE**

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**Thursday February 8, 2007  
10:00 A.M. at**

***Mid-Carmel Valley Fire Station Community Room***

- 1. CALL TO ORDER/ROLL CALL**
- 2. PUBLIC COMMENT**
- 3. CONSENT CALENDAR**
  - A. Approve Minutes from the December 1, 2006 Regular Meeting of the Carmel River Advisory Committee Meeting.**
- 4. REPORT BY SUBCOMMITTEE ON REVIEWING THE CHARGE TO THE CARMEL RIVER ADVISORY COMMITTEE**
- 5. UPDATE AND DISCUSSION ON CARMEL RIVER WATERSHED ACTIVITIES**
- 6. REVIEW AND DISCUSSION OF RESTORATION OBJECTIVES FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION/CAL-AM SETTLEMENT AND THE CARMEL RIVER WATERSHED CONSERVANCY WATERSHED PLAN**
- 7. REVIEW AND DISCUSSION OF CARMEL RIVER CARE GUIDE AND ENFORCEMENT OF CARMEL RIVER RIPARIAN CORRIDOR ORDINANCES**
- 8. STAFF REPORTS**
  - a. INTEGRATED REGIONAL WATER MANAGEMENT PLANNING**
  - b. CARMEL RIVER LAGOON BARRIER BEACH MANAGEMENT**
  - c. POTENTIAL FUNDING SOURCES FOR CARMEL RIVER RESTORATION**
- 9. ITEMS TO BE PLACED ON FUTURE AGENDAS**
- 10. ADJOURNMENT**

*Staff notes regarding these agenda items will be available for public review on Monday, February 5, 2007 at the District office in Monterey.*

**MONTEREY PENINSULA WATER MANAGEMENT DISTRICT  
CARMEL RIVER ADVISORY COMMITTEE  
FEBRUARY 8, 2007**

**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. Approve Minutes from the December 1, 2006 Regular Meeting of the Carmel River Advisory Committee Meeting - Draft minutes from the December 1, 2006 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. REPORT BY SUBCOMMITTEE ON REVIEWING THE CHARGE TO THE CARMEL RIVER ADVISORY COMMITTEE**

**BACKGROUND:** At their December 1, 2006 Regular Meeting, the Committee reviewed the “Charge to the Carmel River Advisory Committee, as adopted by the Board of Directors on December 12, 2005”. The Committee resolved at the meeting to form a sub-Committee to review the charge and meet with members of the MPWMD Board of Directors to discuss this item further.

**RECOMMENDATION:** The sub-Committee should provide an update to the Committee.

**ACTION REQUIRED:** No action is required.

**5. UPDATE AND DISCUSSION ON CARMEL RIVER WATERSHED ACTIVITIES**

**BACKGROUND:** This is a regular agenda item. Clive Sanders, Administrator for the Carmel River Watershed Conservancy (CRWC), will update the Committee about CRWC activities.

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

**6. REVIEW AND DISCUSSION OF RESTORATION OBJECTIVES FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION/CAL-AM SETTLEMENT AND THE CARMEL RIVER WATERSHED CONSERVANCY WATERSHED PLAN**

**BACKGROUND:** The Monterey Peninsula Water Management District (MPWMD) 2006-07 Strategic Plan includes the following three-year goal: *Enhance the protection of water resources of the Carmel River for the benefit of the environment.*

One of the objectives within that goal is:

*Merge and prioritize lists of restoration objectives from the NOAA/Cal-Am settlement and CRWC's watershed plan so that the District has a position on spending priorities for restoration of the Carmel River watershed and present to the Board for consideration.*

The MPWMD Board is scheduled to review this objective at their March 15, 2007 meeting.

The Committee periodically reviews restoration project priorities and makes recommendations to staff and the Board concerning those priorities. At their December 1, 2006 meeting, the Committee reviewed the Settlement Agreement (attached as **Exhibit B**) between NOAA Fisheries and California American Water (Cal-Am). The agreement describes a funding mechanism and mitigation measures for impacts to steelhead due to water extraction by Cal-Am from Carmel Valley. The Committee took no action after reviewing this agreement at the Dec. 1, 2006 meeting.

The Committee is regularly updated on activities that the Carmel River Watershed Conservancy (CRWC) is carrying out, including development and prioritization of the Carmel River Watershed Action Plan.

Attached as **Exhibit C** is a draft memo (Fuerst to Berger) and attachments summarizing recent staff reviews of the Settlement Agreement and the matrix of actions proposed by the CRWC. Staff intends to present its recommendations and the results of the Committee's review to the MPWMD Board at their March 15, 2007 meeting

**RECOMMENDATION:** The Committee should review the NOAA Fisheries/Cal-Am Settlement Agreement, the Carmel River Watershed Assessment and Action Plan 2006 Revision, and the MPWMD staff review concerning spending priorities.

**ACTION REQUIRED:** The Committee make a recommendation to the MPWMD Board of Directors concerning spending priorities in the Carmel River watershed.

## **7. REVIEW AND DISCUSSION OF CARMEL RIVER CARE GUIDE AND ENFORCEMENT OF CARMEL RIVER RIPARIAN CORRIDOR ORDINANCES**

**BACKGROUND:** At their December 1, 2006 meeting, the Committee requested that this item be placed on a future agenda. The MPWMD publication “How to protect and enhance the Carmel River and your property” is attached as **Exhibit D**. The brochure was developed in the late 1990’s to provide property owners along the river with a guide that describes basic river care and MPWMD’s rules that apply along the stream. Attached as **Exhibit E** are MPWMD Rules and Regulations for activities in the Carmel River riparian corridor.

The Committee expressed a desire to produce a one-page summary of rules and recommended practices for the streamside corridor.

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

**8. STAFF REPORTS** - Staff will report on the following:

- a) Integrated Regional Water Management Planning (Hampson)
- b) Carmel River Lagoon barrier beach management (Hampson)
- c) Potential funding sources for Carmel River restoration (Hampson and Bell)

## **9. 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.

## **10. ADJOURNMENT**

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*Draft*  
**MINUTES**  
**MONTEREY PENINSULA WATER MANAGEMENT DISTRICT**  
**CARMEL RIVER ADVISORY COMMITTEE**  
*10:00 A.M.Regular Meeting at*  
*Mid-Carmel Valley Fire Station Community Room*  
**DECEMBER 1, 2006**

1. CALL TO ORDER/ROLL CALL

MEMBERS PRESENT: Susan Rogers, Tom House, John Dalessio, Marjorie Ingram, Larry Levine, Richard H. Rosenthal, Clive Sanders

MEMBERS ABSENT: None

PUBLIC PRESENT: No members of the public were present

STAFF PRESENT: Andy Bell, Thomas Christensen, and Larry Hampson

2. PUBLIC COMMENT – Susan Rogers reported that a wall was being constructed adjacent to the Carmel River Lagoon and next to the Carmel River School at the end of 16<sup>th</sup> Street in Carmel.

3. CONSENT CALENDAR – **Clive Sanders made a motion to approve the minutes from the August 17, 2006 Field Session and Regular Meeting. Tom House seconded. The motion was approved unanimously.**

4. REVIEW CHARGE TO THE CARMEL RIVER ADVISORY COMMITTEE

House said that the process used to define the charge was incomplete. He stated that because the charge recommended by staff and adopted by the Board differed from the recommendation made by the Committee, the Committee and the Board should meet to discuss this difference.

John Dalessio suggested forming a committee to meet with the Chair and Vice-Chair of the Board to review the Committee's charge and terms of service and nominated Tom House, Clive Sanders and volunteered himself to be on the subcommittee. The Committee agreed by consensus.

House then made the following motion: **That the subcommittee [comprised of John Dalessio, Tom House, and Clive Sanders] meet with the MPWMD Board Chair and Vice-Chair to review the Committee charge and terms of service. Sanders seconded. The motion was approved unanimously.**

5. UPDATE AND DISCUSSION ON CARMEL RIVER WATERSHED CONSERVANCY (CRWC) ACTIVITIES

Sanders provided copies of the most recent draft by the CRWC of the proposed matrix of projects to manage, enhance, and restore the Carmel River watershed and asked for Committee input. He stated that the e-mail address for CRWC had been changed to [steelheadCRWC@sbcglobal.net](mailto:steelheadCRWC@sbcglobal.net) and that Committee members could send comments to the new address.

6. PRESENTATION ON INTERPRETING WEB DATA FOR THE CARMEL RIVER

Thomas Christensen described several sources of data available on the web for Carmel River stage, flow, and weather conditions and gave some basic guidelines on understanding and interpreting the data.

7. DISCUSSION OF POTENTIAL MITIGATION MEASURES TO OFFSET IMPACTS OF WATER WITHDRAWALS FROM THE CARMEL RIVER

MPWMD staff gave a brief summary of the NOAA Fisheries/Cal-Am Settlement Agreement. The Committee discussed the process for funding projects and requested that MPWMD contact Congressman Sam Farr's office to inquire about the status of the agreement (Andy Bell to follow up).

8. STAFF REPORTS – under item c) “Summer/Fall 2006 vegetation management (Christensen),” the Committee recommended that fish passage barriers in the Carmel River, such as small hand-built summer dams, be removed during vegetation management activities. Christensen noted that when MPWMD staff find such dams on the river blocking fish migration, a portion is removed to allow fish and flow to pass.

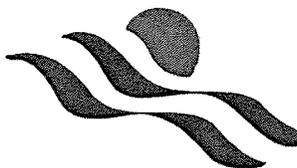
9. ITEMS TO BE PLACED ON FUTURE AGENDAS

Committee members requested that the following items be placed on a future agenda:

- a. Awareness and enforcement of MPWMD Rules and Regulations for the Carmel River riparian corridor.
- b. Review the charge to the Committee.
- c. Review the IRWM Plan and invite BSLT to a meeting.
- d. Request that Sidney Reade give a presentation on being prepared for emergencies.

10. ADJOURNMENT – the meeting was adjourned at 12:16 p.m.

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# California American Water Company

303 H Street, Suite 250, Chula Vista, California 91910 (619) 409-7700 Fax (619) 409-7701

July 21, 2006

**ADVICE LETTER NO. 652-W**

(California-American Water Company U 210 W)

CALIFORNIA PUBLIC UTILITIES COMMISSION  
WATER DIVISION

**SUBJECT:** Request to Establish a Memorandum Account to Track Compliance Payments to National Oceanic and Atmospheric Administration in Regards to the Endangered Species Act

California-American Water Company (“California American Water”) hereby transmits for filing the following changes in tariff schedules applicable to its Monterey District and which are attached hereto:

<u>Cal. P.U.C. Sheet No.</u>	<u>Title of Sheet</u>	<u>Cancelling Cal P.U.C. Sheet No.</u>
4434-W	Table of Contents	4432-W
4433-W	Preliminary Statement	4427-W

**PURPOSE**

The purpose of this advice letter is to request the California Public Utilities Commission’s (“Commission’s”) approval to establish the National Oceanic and Atmospheric Administration Endangered Species Act Compliance Costs Memorandum Account (“NOAA/ESA Memo Account”) to track compliance payments made by California American Water to the United States Department of Commerce, National Oceanic and Atmospheric Administration (“NOAA”) for Federal Endangered Species Act (“ESA”) mitigation in its Monterey District. California American Water will seek recovery of these costs in its future Monterey District General Rate Cases (“GRC”).

## **BACKGROUND**

California American Water was recently faced with the prospect that NOAA would impose fines as high as \$330 million or more per year for claimed violations of the ESA caused by its Monterey District operations on the Carmel River. Under a Settlement Agreement with NOAA executed on June 29, 2006 (“Settlement Agreement”), attached hereto as Attachment A, California American Water has agreed to make payments to NOAA so that NOAA can finance certain mitigation measures on the Carmel River to assist in protection of listed species. California American Water’s payment for the mitigation would also avoid the likelihood that NOAA would seek to impose fines of \$330 million or more per year and the litigation that likely would result. California American Water’s first payment obligation under the Settlement Agreement – totaling \$3,500,000 – is due on August 28, 2006. California American Water requests Commission authority to establish the NOAA/ESA Memo Account in time to record this first payment obligation under the Settlement Agreement. California American Water accordingly requests that the Commission grant this authority to establish the NOAA/ESA Memo Account effective 30 days after the filing date of this Advice Letter, or August 21, 2006.

On September 18, 2001, California American Water and NOAA executed a Conservation Agreement that required California American Water to implement certain measures to mitigate the impact of its pumping operations in the Carmel River in the Monterey District on steelhead trout and their habitat. CAW implemented the mitigation measures under the Conservation Agreement. One of the measures was increasing well capacity in the lower Carmel Valley. By February 2004, it became clear that such increase was not feasible. California American Water and NOAA discussed other mitigation measures but did not reach agreement. On June 2, 2005, NOAA sent a letter to California American Water informing the Company that the measures the Company originally agreed to were insufficient to redress the total effect of California American Water’s operations in the Carmel River. As a result, NOAA demanded that California American Water pay \$5.5 million for mitigation.

As the Commission is well aware, California American Water must pump water from the Carmel Valley Aquifer in order to meet its public utility service obligations and the water demand of its Monterey District customers. The U.S. Fish and Wildlife Service (“USFWS”) and NOAA have alleged, however, that California American Water is engaging in illegal “takes” of listed threatened species by pumping water from the Carmel Valley Aquifer and operating the San Clemente Dam and Los Padres Dam, in violation of the ESA. Under an order of the State Water Resources Control Board (Order 95-10), California American Water has been vigorously pursuing long-term water supply projects to substantially reduce its pumping from the Carmel Valley Aquifer. To that end, in Application No. 04-09-019 California American Water seeks approval to construct a proposed desalination facility, known as the Coastal Water Project. Until California American Water can obtain approval of the Coastal Water Project or obtain alternative sources of water, however, it must continue to pump water from the Carmel Valley Aquifer to serve its Monterey District customers. (*See generally* California American Water’s 2006 Monterey District GRC Application (A.05-02-012), Exh. 1

(Direct Testimony of Jan S. Driscoll), Exh. 18 (Rebuttal Testimony of Jan Driscoll), and Exh. 107 (Supplemental Testimony of Jan S. Driscoll).)

California American Water has for many years faced the regulatory dilemma of meeting its obligation to serve its customers by pumping from the Carmel Valley Aquifer or complying with the ESA only by interrupting or dramatically reducing water service to its Monterey District Customers. (D.98-08-036, *Application of CALIFORNIA-AMERICAN WATER COMPANY (U 210 W) for an Order Allowing Immediate Implementation of Changes to Phase IV of Mandatory Water Conservation Plan and Creation of Related Balancing Account, and for Order to Expedite Processing of All Applications, et al.* (1998) 81 CPUC 2d 648, 653, 1998 Cal. PUC LEXIS 617.)

California American Water Company is between a rock and a hard place. It is caught between the regulatory mission of two government agencies. On the one hand, this Commission requires Cal-Am to serve customers. On the other hand, the Water Resources Control Board requires Cal-Am to abide by its pumping restrictions. As a result of trying to please two entities Cal-Am may incur fines levied by the [SWRCB].

(1998 Cal. PUC LEXIS 617 at \*27.) By executing the Settlement Agreement, California American Water has enabled itself to continue serving its Monterey District customers uninterrupted and avoids the imposition of potentially devastating fines by NOAA for alleged violations of the ESA.

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION ENDANGERED SPECIES ACT COMPLIANCE COSTS MEMORANDUM ACCOUNT**

In this advice letter filing, California American Water requests authority to establish the NOAA/ESA Memo Account to record the compliance payments made to NOAA pursuant to the Settlement Agreement for ESA mitigation in California American Water's Monterey District.

Under the Settlement Agreement, California American Water will pay NOAA an initial lump sum payment of \$3,500,000 on August 28, 2006. Thereafter, payments of \$1,100,000 are due on the June 29 anniversary of the Settlement Agreement for the life of the Settlement Agreement. The agreement can be extended by mutual agreement of California American Water and NOAA). (Settlement Agreement, pp. 3, 5-6.) That annual obligation will cease earlier if California American Water succeeds in securing a replacement water supply. Under the Settlement Agreement, the funds will be used by NOAA for mitigation, including improvement to habitat conditions for and production of steelhead and recovery of steelhead in the Carmel River Watershed. (*Id.*, p.3.)

**CALIFORNIA AMERICAN WATER MEETS THE FOUR-PRONGED TEST FOR MEMORANDUM ACCOUNTS**

By this Advice Letter, California American Water seeks Commission authority at this time only to establish the NOAA/ESA Memo Account and to track in that account payments California American Water makes to NOAA pursuant to the Settlement Agreement for mitigation measures designed pursuant to the ESA to reduce the impact of California American Water's operations in the Carmel River on steelhead trout. California American Water is not seeking to recover these compliance costs at this time. Customers, the Division of Ratepayer Advocates, and any other appropriate party will have an opportunity to address the actual recovery of these compliance costs in the future Monterey District GRCs.

Under the Settlement Agreement, the payments are for mitigation purposes, not fines. The Division of Ratepayer Advocates (formerly Office of Ratepayer Advocates) executed a settlement agreement with California American Water in the pending Monterey District GRC (A.05-02-012) and agreed that California American Water should be allowed to establish the ESA Memorandum Account to track costs incurred to with comply with ESA requirements. (A.05-02-012, *Compliance Filing to Submit Separate and Conformed Settlement Agreements between the Office of Ratepayer Advocates and California-American Water Company* (October 21, 2005), Exh. 1 (*Settlement Agreement as to Certain Issues for the Monterey District, Including Cost of Capital, between the Office of Ratepayer Advocates and California-American Water Company* (October 20, 2005), para. 4.14(d).) The Commission has in the past approved a settlement agreement allowing California American Water memorandum account treatment for ESA mitigation and compliance. (D.00-03-053, *Application of California American Water Company (U210W) for an Ordering Authorizing it to Increase its Rates for Water Service in its Monterey Division*, 2000 Cal. PUC LEXIS 229, \*88.) Indeed, the Commission has also in the past approved memorandum account treatment for fines when California American Water was faced with the potential choice between having to violate its public utility obligation to serve customers or incurring a fine. (D.98-08-036, *supra*, 1998 Cal. PUC LEXIS 617.) California American Water is seeking this memorandum account at this time due to the fact that a final decision in A.05-02-012 has not been rendered and is likely not to be rendered for some time.

California American Water meets for the four-pronged test for memorandum accounts previously established by the Commission:

(1) The ESA compliance costs are caused by an event of an exceptional nature that is not under the utilities' control if it is to comply with its service obligation. As discussed above and as previously recognized by the Commission (D.98-08-036, *supra*, 1998 Cal. PUC LEXIS 617), California American Water cannot avoid the alleged ESA violations – caused by continuing to pump from the Carmel Valley Aquifer – without negatively impacting its obligation to serve its customers. California American Water's untenable position, therefore, is certainly an "event of an exceptional nature."

(2) The expenses cannot have been reasonably foreseen in California American Water's last GRC filing (A.05-02-012), as the Settlement Agreement was negotiated and executed after the record in that proceeding was submitted.

(3) The expense is of a substantial nature in the amount of money involved - \$3,500,000 due on August 28, 2006 and thereafter \$1,100,000 due on the June 29<sup>th</sup> anniversary of the Settlement Agreement for the life of the Settlement Agreement.

(4) California American Water's customers will benefit by the memorandum account treatment. Memorandum account treatment for the ESA compliance costs enables California American Water to continue to serve its Monterey District customers uninterrupted while protecting itself and its ratepayers from the prospect of severe ESA fines threatened by NOAA. The Monterey District customers would obviously benefit from continued water service. As well, the ESA compliance costs will also be applied to environmental efforts in the area, which will also benefit the local ratepayers. Finally, the Commission has the authority to review all amounts recorded in the memorandum account for reasonableness in future California American Water GRCs for its Monterey District.

#### **EFFECTIVE DATE**

California American Water requests that this memorandum account become effective 30 days after the filing date of this Advice Letter, or on August 21, 2006.

#### **NOTICE, PROTESTS, AND REPLIES**

California American Water will provide a copy of this advice letter to all parties in A.05-02-012.

There are two ways to respond to this notice. You can send a protest to the Commission and, if you do, you must send a copy of the protest to California American Water; or you can send a response to the Commission with a copy to California American Water if you wish. A protest is a document objecting to the granting in whole or in part of the authority sought in the advice letter. A response is a document that does not object to the authority sought, but nevertheless presents information that the party tendering the response believes would be useful to the Commission in acting on the request.

Within 20 days of the date the Commission accepts the advice letter for filing, a protest must be received by the Water Division and served on California American Water on the same day. A protest must state the facts on which the protest is based, the effect that approval of the advice letter might have on the protestant, and the reasons the protestant believes the advice letter, or a part of it, is not justified. If the protest requests an evidentiary hearing, the protest must state the facts the protestant would present at an evidentiary hearing to support its request for whole or partial denial of the advice letter.

California American Water will provide the Water Division a reply to any protests within five business days after the end of the protest period. California American Water will serve a copy of its response on the protestant on the same day it submits its response to Water Division.

All protests and responses should be sent by both email and U.S. Mail to:

California Public Utilities Commission  
Water Division  
505 Van Ness Avenue  
San Francisco, California 94102  
Email: [water\\_division@cpuc.ca.gov](mailto:water_division@cpuc.ca.gov)  
Facsimile: (415) 703-4426

Copies should also be mailed to the attention of Kevin Coughlan, Director, Water Division at the same above street address or at [kpc@cpuc.ca.gov](mailto:kpc@cpuc.ca.gov).

In addition, protests and all other correspondence regarding this advice letter should also be sent by letter and transmitted via facsimile or electronically to the attention of:

David P. Stephenson  
Director of Rates & Planning  
California-American Water  
Company  
4701 Beloit Drive  
Sacramento, California 95838

Facsimile: (916) 568-4260  
E-Mail: [dstephen@amwater.com](mailto:dstephen@amwater.com)

Lori Anne Dolqueist, Esq.  
Steefel, Levitt & Weiss  
A Professional Corporation  
One Embarcadero Center  
30th Floor  
San Francisco, California 94111

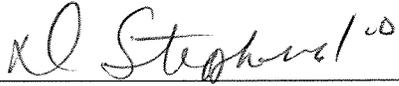
Facsimile: (415) 788-2019  
E-mail: [LDolqueist@steefel.com](mailto:LDolqueist@steefel.com)

If you have not received a reply to your protest from California American Water within 10 business days after the end of the protest period, contact these persons at the phone numbers indicated above.

In accordance with Section III, Paragraph G, of General Order No. 96-A, California American Water is serving copies of this advice filing on the interested parties shown on the attached service list.

Further, in accordance with Public Utilities Code Section 491, notice to the public is hereby given by filing and keeping the advice filing at California American Water's corporate offices at 303 H Street, Suite 250, Chula Vista, California 91910 and at 50 Ragsdale Drive, Suite 100, Monterey, California 93940.

Questions relating to this advice filing should be addressed to Lori Anne Dolqueist, Esq. of Steefel Levitt & Weiss, P.C., at (415) 403-3255 or LDolqueist@steefel.com.



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David P. Stephenson  
Director of Rates & Planning  
California-American Water Company

# **ATTACHMENT A**

## SETTLEMENT AGREEMENT

THIS SETTLEMENT AGREEMENT ("Agreement") is made by and between California American Water Company ("CAW") and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration ("NOAA"). Throughout this Agreement, CAW and NOAA are collectively referred to as the "Parties."

### Recitals

A. CAW is the owner and operator of the public drinking water system for the Monterey Peninsula, which serves approximately 40,000 customers. CAW is regulated by the California Public Utilities Commission ("CPUC") and is mandated by California law to serve potable water to its customers and to comply with federal and state safe drinking water laws and regulations, as well as the Federal Endangered Species Act. A major source of CAW's water supply is diversions from the Carmel Valley Aquifer. CAW is currently working to develop an alternative long-term water supply to replace a significant portion of that water supply.

B. CAW's operations on the Carmel River are regulated by a number of agencies pursuant to certain orders and agreements. State Water Resources Control Board Order 95-10 mandates that CAW find an alternative supply for 10,730 acre-feet ("AF") of water and, pending the implementation of an alternative water supply, limit its diversions from the Carmel Valley to 11,284.8 AF. Order 95-10 was amended in 2002 to incorporate certain provisions of the Conservation Agreement (described below) relating to additional limitations on CAW's diversions at San Clemente Dam and upstream wells during low flow periods. CAW's operation of Los Padres and San Clemente Dams is controlled by an annual agreement among CAW, the Monterey Peninsula Water Management District and the California Department of Fish & Game. CAW's operation of San Clemente Dam is further constrained by a mandate issued by the California Division of Safety of Dams ("DSOD") to institute interim safety measures that include lowering the water levels in the reservoir behind San Clemente Dam during the dry season (approximately seven months each year).

C. On September 18, 2001, NOAA and CAW entered into a Conservation Agreement ("Conservation Agreement"), which required CAW to implement certain measures to reduce the impact of its operations in the Carmel River on steelhead and their habitat.

D. The goals and objectives of the Conservation Agreement were as follows:

1. NMFS' goal and objective are to protect and conserve Steelhead in the Carmel River, including maximizing the Carmel River Basin's substantial contribution toward recovering this [S]outh [C]entral California Coast Steelhead ESU ["SCCC steelhead"] and to enforce the ESA [Endangered Species Act].

2. Cal-Am's [CAW's] goal and objective are to supply water in accordance with its CPUC Certificate in a manner that complies with the Federal ESA and other regulatory obligations.

E. The Conservation Agreement contained three tiers of activities. Tier I included short- and mid-term actions designed to conserve steelhead in the Carmel River. Tier II described the process to be followed to address DSOD's issues with San Clemente Dam and other mid-term measures designed to conserve steelhead in the Carmel River. Tier III described the process to be followed to address the long-term implementation of actions designed to meet the goals identified by the Parties in the Conservation Agreement.

F. Since September 2001, CAW has implemented all of the measures set forth in Phase I of Tier I of the Conservation Agreement. These measures include ceasing surface water diversions at San Clemente Dam during low flow periods, ceasing diversions from the Upper Carmel Valley Wells during low flow periods, and installing a booster station to move water from the lower Carmel Valley to the Upper Carmel Valley. In addition, as part of an overall effort to protect and enhance SCCC steelhead, CAW and its customers have paid for additional steelhead mitigation measures for many years. These measures, implemented by the Monterey Peninsula Water Management District, include annual fish rescues, the construction and operation of a rearing facility to hold rescued steelhead, monitoring of and improvements to the instream and riparian habitat, improvements to the Carmel River Lagoon, and monitoring fish numbers during migration, and have cost CAW's ratepayers over \$28M to date.

G. Phase II of Tier I of the Conservation Agreement required CAW to maintain a continuous surface flow in the Carmel River as far downstream as possible in AQ3 (a defined area of the Carmel Valley Aquifer) by offsetting CAW water diversions in upstream sections of AQ3 with expanded diversion capability in AQ4, in the lowermost reaches of AQ3, and the Seaside aquifer storage and recovery ("ASR") expansion. Phase II required CAW to increase well capacity downstream of and including the San Carlos Well by 3.0 to 5.0 cfs. CAW retrofitted the Rancho Cañada Well and increased its capacity initially by 140%. The reconditioned well was put into service on March 31, 2003. At about the same time, the California Department of Health Services opined that extractions from the nearby San Carlos Well constitute groundwater under the influence of surface water. The San Carlos well was therefore taken out of service, as there is no means of providing surface water treatment at that location. This resulted in no net gain in pumping capacity in the lower aquifer.

H. The next step in Phase II of Tier I of the Conservation Agreement was to be the installation of a new well in the lower aquifer. Studies showed that any new well in the lower Carmel Valley would likely require surface water treatment and construction of a surface water treatment plant, which was estimated to cost approximately \$5.5 million. In light of CAW's need to focus its financial and personnel resources on a long-term water supply project, rather than those interim measures in the Carmel River, the Parties agree that proceeding with the measures set forth in Phase II of Tier I would not be financially prudent.

I. NOAA asserts that additional mid-term measures are required to further reduce the impact of CAW's operations in the Carmel River on steelhead and their habitat pending CAW's development of a long-term water supply. CAW agrees that there are further interim measures that will benefit the steelhead.

A G R E E M E N T :

I. Continuation of Tier I Phase I Activities and Certain Tier I Phase II Activities:

Throughout the term of this Agreement, CAW shall continue to implement all of the measures described in Phase I of Tier I of the Conservation Agreement.

II. New Tier I Phase II Activities:

A. CAW shall provide funding for projects to improve habitat conditions for, and production of, SCCC steelhead and/or otherwise aid in the recovery of SCCC steelhead in the Carmel River Watershed. CAW shall provide an initial lump sum payment of Three Million Five Hundred Thousand Dollars (\$3,500,000.00) within 60 days of the execution of this Settlement Agreement ("Agreement"). CAW will further provide the sum of One Million One Hundred Thousand Dollars (\$1,100,000.00) on the first anniversary of the Agreement and again on each subsequent anniversary of the Agreement until it expires.

B. NOAA shall, at its sole discretion, select and prioritize the projects to be funded with the money supplied by CAW pursuant to paragraph II. A. NOAA shall consult with CAW on all projects funded under this Agreement.

C. The Parties recognize that any activity on or near the Carmel River can have potentially adverse effects on CAW's ability to serve potable water safe for public consumption. NOAA will not undertake any projects that will affect CAW's mandate under California law to serve potable water to its customers and to comply with federal and state safe drinking water laws and regulations.

III. Tier III Activities:

CAW has identified the CWP as its proposed project for a long-term water supply to replace 10,730 AF of water that CAW diverts from the Carmel Valley Aquifer, plus approximately 1,000 AF to protect against overdraft of the Seaside Basin. CAW will continue to diligently pursue the environmental review and required permits to design, build and operate the CWP. The current schedule contemplates having the CWP in operation by 2012 at the earliest. The parties recognize that the CWP will require extensive environmental review and permits from many federal, state and local agencies over which CAW has no control. CAW will keep NOAA informed of the CWP's schedule, progress, potential delays and the reasons therefore.

IV. NOAA's Cooperation with CAW and Other Agencies

The parties recognize that the CPUC is CAW's primary regulatory agency. CAW is obligated to serve its customers in a cost-effective manner. CAW must obtain CPUC permission to fund activities such as environmental mitigation, and the rates charged to CAW's customers must be approved by the CPUC. NOAA acknowledges that in CAW's role as a CPUC regulated water provider, that it has an obligation to serve its customers.

California American Water (CAW) is facing a plethora of permitting and regulatory issues related to CAW's quest to implement a replacement long-term water supply, to comply with the ESA and regulatory requirements of other federal and state agencies.

Cooperation, as used herein, means providing comments on a project or course of action by writing letters, appearing at public meetings and hearings to speak or give testimony, and meeting with other government agencies, consistent with NOAA's mission, policies, and its ESA responsibilities, and taking into account the limitations imposed by staff time and resources.

A. California Public Utilities Commission (CPUC)

1. NOAA will cooperate in CPUC proceedings related to approval of the Certificate of Public Convenience and Necessity for a replacement long-term water supply project by explaining the importance of the recovery of the SCCC steelhead and the habitat of the Carmel River, and the environmental benefits of a replacement long-term water supply compared to the environmental detriment of continuing the current water supply for the Monterey Peninsula.

2. NOAA will cooperate in any CPUC general rate proceedings concerning the recovery in rates of costs of a replacement long-term water supply project and funds paid for mitigation by explaining to the CPUC: (1) the benefits to steelhead of any mitigation funds paid pursuant to any agreement with NOAA; (2) the penalties applicable to violations of the ESA; and (3) compliance with the ESA is mandatory.

B. Other Agencies with Permitting/Regulatory Authority over the Coastal Water Project.

1. Monterey Bay National Marine Sanctuary (MBNMS)

NOAA will cooperate with CAW by meeting with NOAA personnel who manage MBNMS to educate them about how a replacement long-term water supply project will benefit listed species in the Carmel River and its habitat; discuss with CAW and MBNMS any concerns of MBNMS regarding a replacement long-term water supply project's potential effects on MBNMS.

2. California Coastal Commission (CCC)

A Coastal Development Permit from CCC is required. NOAA will cooperate with CAW by (1) explaining the critical need for the replacement of a long-term water supply for Carmel River to CCC and that the means of providing such a replacement water supply are extremely limited and (2) that CCC should consider the overall environmental picture for Monterey Peninsula, including the benefit to listed species in and along the Carmel River, and not just the marine species in MBNMS.

3. State Water Resources Control Board (SWRCB)

The second component of the CWP is aquifer storage and recovery (ASR), which will require water rights permits from SWRCB. NOAA has supported the concept

of ASR for years. NOAA will cooperate with CAW regarding the benefits of diversions to ASR during times of excess flow on the Carmel River. NOAA will meet and confer with CAW to discuss any of its concerns with CAW'S ASR permit applications before commenting publicly.

4. U.S. Fish and Wildlife Service (USFWS)

NOAA will cooperate with CAW regarding USFWS issues related to permits for a replacement long-term water supply project.

5. California Department of Fish & Game (CDF&G)

NOAA will cooperate with CAW regarding CDF&G issues related to permits for a replacement long-term water supply project.

V. Prosecutorial Discretion:

It is the responsibility of NOAA to investigate and take appropriate enforcement action with respect to violations of the ESA involving species under its jurisdiction. In light of the substantial amounts of time and money that have been, and will continue to be, expended by CAW on steelhead conservation measures, NOAA agrees that prosecution of CAW for ESA violations relating to its pumping operations and water withdrawals from the Carmel River is not the preferred course of action.

Accordingly, so long as CAW complies with the terms and conditions of this Agreement, NOAA will exercise enforcement discretion relative to any potential violation of the ESA committed by CAW involving its pumping operations or water withdrawals from the Carmel River in the following manner:

A. NOAA may investigate and document each apparent ESA violation.

B. NOAA will exercise enforcement discretion in prosecuting such ESA violations, if in the sole view of NOAA, CAW has fully complied with the terms and conditions of this Agreement.

C. If NOAA believes CAW has not complied with any term or condition of this Agreement, NOAA shall notify CAW of said belief within five (5) business days after making this determination.

VI. Term of Agreement:

A. This Agreement shall commence on the date of signature by the last Party executing this Agreement, and shall expire (i) on the calendar day immediately preceding the expire on the seventh (7<sup>th</sup>) anniversary of this Agreement or (ii) upon CAW's compliance with Ordering Paragraph 2 of the State Water Resources Control Board Order 95-10, whichever occurs first.

B. The term of this Agreement may be extended by mutual consent of the Parties.

VII. Miscellaneous Provisions:

A. Although this Agreement does not address NOAA's ESA concerns with respect to any of CAW's operations other than well-pumping and water withdrawals, the Parties agree that they will negotiate in good faith using their best efforts to reach an agreement by August 31, 2006, to address NOAA's ESA concerns regarding CAW's remaining operations. Any subsequent agreement may include an extension of the term of this Agreement.

B. Either of the Parties may issue a press release regarding the contents of this Agreement after the other Party has been given adequate opportunity to review and comment on the draft press release.

C. The provisions of this Agreement shall apply to and be binding upon the Parties and their respective successors and assigns.

D. This written Agreement and the Conservation Agreement signed by the Parties on September 18, 2001, shall constitute the sole and entire agreement between the Parties and supersede any prior agreements and understandings whether oral or otherwise. The terms and conditions of the Conservation Agreement, except any obligations to increase well capacity in the lower Carmel Valley as previously required by Phase II Tier I, are expressly incorporated herein by reference. Any modification of this Agreement shall be in writing and signed by the Parties.

E. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and such counterparts shall constitute one and the same agreement.

F. Each undersigned representative of a party to this Agreement certifies that he or she is fully authorized by that party to enter into and execute the terms of this Agreement and legally bind such party to this Agreement.

G. If CAW breaches section II.A of this Agreement by failing to provide any funding required under II A. within the time period set forth in this paragraph, NOAA shall give CAW written notice of such breach and demand that the funding be provided within ten (10) business days of receipt of such notice by CAW.

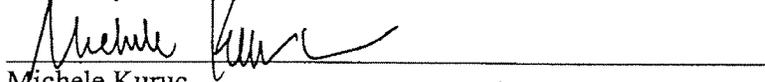
ACCEPTED ON BEHALF OF CALIFORNIA-AMERICAN WATER COMPANY BY:



Paul Townsley  
California-American Water Company

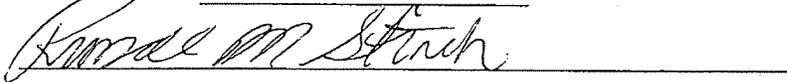
DATED: June 29, 2006

ACCEPTED ON BEHALF OF THE DEPARTMENT OF COMMERCE BY:



Michele Kuruc  
Office of General Counsel for Enforcement & Litigation, NOAA

DATED: June 29 2006



 Rodney McInnis  
Regional Administrator Southwest Region  
National Marine Fisheries Service, NOAA

DATED: June 29, 2006

<b>CALIFORNIA PUBLIC UTILITIES COMMISSION</b> <b>Advice Letter Filing Summary Sheet</b>	(Date Filed / Received Stamp by CPUC)
--	---------------------------------------

Company Name: California-American Water Company	CPUC Utility Number U - 210 - W
---	---------------------------------

Address: 4701 Beloit Dr.

City, State, Zip: Sacramento, CA 95838

AL #: 652-W      Requested Effective Date: August 21, 2006	<input checked="" type="checkbox"/> Resolution Required?
--	--

	Contact Name:	Email Address:	Phone No.:	Fax No.:
Filer	David P. Stephenson	<a href="mailto:dstephen@amwater.com">dstephen@amwater.com</a>	(916) 568-4222	(916) 568-4260
Alternate	Lori Anne Dolqueist	<a href="mailto:LDolqueist@steefel.com">LDolqueist@steefel.com</a>	(415) 403-3255	No. Tariff Sheets: 2

(Name, email address & Phone and FAX numbers *are required for "Filer"*)

Annual Revenue Change: \$0.00 \_\_\_\_\_ % \_\_\_\_\_

Tariff Schedules: Table of Contents 4434-W; Preliminary Statement 4433-W  
 Subject of filing: Request for authorization to establish National Oceanic and Atmospheric Administration Endangered Species Act Compliance Costs Memorandum Account

(Service(s) included)

Authorization for filing: \_\_\_\_\_  
 (Resolution #, Decision #, etc.)

Related Advice Letter(s): \_\_\_\_\_  
 (Similar service, replacement filing)

Notes/Comments: \_\_\_\_\_  
 (Other information & reference to advice letter, etc.)

<p><b><u>Send Protest and/or Correspondence within 20 days to:</u></b></p> <p><i>and if you have email capability, also email to:</i></p> <p><b><u>Protest also must be served on utility:</u></b></p>	<p>Director, Water Division          505 Van Ness Ave., San Francisco, CA 94102</p> <hr/> <p><a href="mailto:water_division@cpuc.ca.gov">water_division@cpuc.ca.gov</a></p> <hr/> <p>(see utility advice letter for more information)</p>
--	---

(FOR CPUC USE ONLY)

WTS Program/Activity/Type  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Resolution Required

WD Suspension on: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Comm. Suspension on: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Resolution No.: W - \_\_\_\_\_

*Rev. 04/01/05*

Supv. / Analyst \_\_\_\_\_ / \_\_\_\_\_

Due Date to Supv.: \_\_\_\_\_

Analyst Completion Date: \_\_\_\_\_

Supervisor Approval Date: \_\_\_\_\_

AL / Tariff Effective Date: \_\_\_\_\_

Notes: \_\_\_\_\_

TABLE OF CONTENTS

The following listed tariff sheets contain all effective rates and rules affecting the charges and services of the Utility, together with other pertinent information:

<u>SUBJECT MATTER OF SHEET</u>	<u>C.P.U.C. SHEET NO.</u>
TITLE PAGE	4107-W
TABLE OF CONTENTS	4434-W, 4425-W, 4422-W (T) 4431-W, 4045-W, 4046-W, 4251-W
PRELIMINARY STATEMENTS	4143-W, 4433-W (T)
SERVICE AREA MAP	
California-American Water Company	4129-W
Baldwin Hills	995-W, 996-W
Coronado	2235-W
Duarte	1633-W, 941-W, 942-W
Felton	4130-W
Larkfield	4313-W
Montara	4132-W
Monterey Peninsula	4316-W, 2740-W, 2741-W 2742-W, 2752-W, 2744-W 2745-W, 4315-W, 4293-W, 944-W, 945-W, 947-W/955-W, 957-W/964-W, 966-W/969-W, 971-W/984-W, 4042-W, 4043-W
Sacramento	4133-W, 4151-W, 4135-W, 4136-W 4137-W, 4138-W, 4139-W, 4140-W 4141-W, 4142-W,
San Marino	935-W/937-W, 513-W, 1986-W
Village	2607-W

(Continued)

PRELIMINARY STATEMENT

(continued)

F. Credit Card Memorandum Account

The purpose of the Credit Card Memorandum Account is to track avoided costs of check processing due to customers paying by credit card. This memo account will be credited \$1,50 per credit card transaction as specified in Advice letter 640-A. The memorandum account will remain open until the time of the next general rate case filing for each district.

At the time of the rate case decision in each district, the avoided check processing fees will be credited back to all customers as a sur-credit over the appropriate time period.

G. Sarbanes-Oxley Memorandum Account

The purpose of the Sarbanes-Oxley Memorandum Account is to track California American Water's allocated share of expenses incurred by its parent company, American Water Works, to comply with the audit, reporting, certification and all other requirements pursuant to the Sarbanes-Oxley Act of 2002, 107 PL 204. The memorandum account will remain open until the time of the next rate case filing for the General Office.

H. National Oceanic and Atmospheric Administration Endangered Species Act ("NOAA/ESA") Memorandum Account (N)

The purpose of the NOAA Memorandum Account is to track compliance payments made by California American Water to the United States Department of Commerce National Oceanic and Atmospheric Administration ("NOAA") for Federal Endangered Species Act ("ESA") mitigation in its Monterey District. California American Water will seek recovery of these costs in its future Monterey District general rate case. (N)

(TO BE INSERTED BY UTILITY)

ISSUED BY

(TO BE INSERTED BY C.P.U.C.)

ADVICE LETTER NO. 652

D. P. STEPHENSON

DATE FILED

NAME

EFFECTIVE

DECISION NO.

MGR - RATES & REGULATION

RESOLUTION NO. 26

TITLE

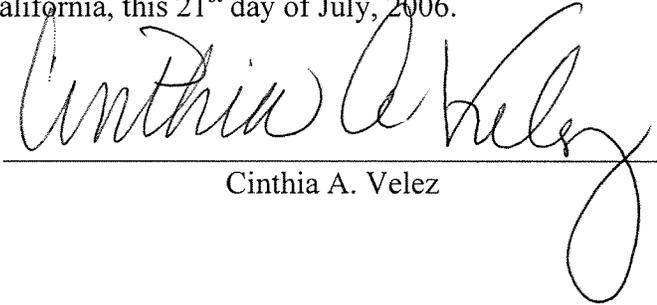
**CERTIFICATE OF SERVICE**

I hereby certify that I have caused to be served this day the following:

*Advice Letter No. 652-W of California-American Water Company (U 210 W)*

upon all parties via e-mail (where e-mail addresses are available) and/or by U.S. Mail, first class postage prepaid, at the addresses attached to the original of this Certificate.

Executed at San Francisco, California, this 21<sup>st</sup> day of July, 2006.



Cinthia A. Velez

City of Monterey  
City Hall  
Monterey, CA 93940  
Attn: City Clerk

Residents Water Committee  
27195 Meadows Road  
Carmel, CA 93923  
Attn: Pat Bernardi

Ross G. Hubbard  
City of Pacific Grove  
c/o City Manager's Office  
300 Forest Ave, 2<sup>nd</sup> floor  
Pacific Grove, CA 93950

Karen Crouch  
City Clerk,  
Carmel-By-The-Sea  
PO Box CC  
Carmel-by-the-Sea, CA 93921

City of Sand City  
City Hall  
California & Sylvan Avenues  
Sand City, CA 93955  
Attn: City Clerk

City of Seaside  
City Hall  
440 Harcourt Avenue  
Seaside, CA 93955  
Attn: City Clerk

Monterey Peninsula Water Mgmt Dist.  
P.O. Box 85  
Monterey, CA 93942  
Attn: Mr. Ray Millard

Ann Anderson  
County Clerk  
County of Monterey  
P.O. Box 1728  
Salinas, CA 93902

City of Del Rey Oaks  
City Hall  
650 Canyon Del Rey Road  
Del Rey Oaks, CA 93940  
Attn: City Clerk

Bishop Water Company  
11552 Hidden Hills Road  
Carmel Valley, CA 93924

Alco Water Service  
249 Williams Road  
Salinas, CA 93901

Hoge, Fenton, Jones, & Appel, Inc.  
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Attn: Ronald F. Scholl

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Attn: Steven Eimer

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California American Water  
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Sacramento, CA 95838

Monterey Peninsula Water Management District

*DRAFT*

Memorandum

**To:** David Berger, General Manager  
**From:** Darby Fuerst, Water Resources Manager  
**Subject:** Recommended Spending Priorities for Restoration of the Carmel River Steelhead Resource  
**Date:** February 1, 2007

---

This memorandum summarizes the recommended spending priorities for restoration of the Carmel River steelhead resource. The recommendations were developed by staff from the District's Water Resources Division and Planning and Engineering Division based on lists of proposed restoration projects developed by the National Marine Fisheries Service (NMFS) and the Carmel River Watershed Conservancy (CRWC) in November 2005 and October 2006, respectively. The recommendations were developed as part of the District Board's strategic plan. Specifically, in September 2006, the Board requested that staff "merge and prioritize" lists of proposed restoration projects so that the District has a position on spending priorities for restoration of the Carmel River watershed. The Board also requested that the recommendations be reviewed by the District's Carmel River Advisory Committee (CRAC). The merged list of proposed restoration projects is included as **Attachment 1**.

**Attachment 1** shows the nine proposed restoration projects that were developed as part of a workshop conducted by NMFS in November 2005. Participants at the workshop included staff from NMFS, California American Water (CAW), Carmel River Steelhead Association (CRSA), CRWC, and the District. Representatives from California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and the Sierra Club were invited, but unable to attend. **Attachment 2** is a summary of the results of the workshop prepared by NMFS and includes detailed descriptions of each of the proposed restoration projects. As indicated in **Attachment 2**, the goal of the workshop was to produce a list of "potential mitigation projects that would improve the survival of steelhead in the Carmel River" in the interim period before a water supply project is constructed. These proposed projects would be funded by CAW under a settlement agreement with NMFS that was executed on June 29, 2006. As part of the settlement agreement, CAW agreed to provide funding to improve habitat conditions for, and production of, South Central California Coast (SCCC) steelhead and otherwise aid in the recovery of SCCC in the Carmel River watershed. As agreed, CAW would provide an initial lump sum of \$3,500,000 and an additional \$1,100,000 each year until 2013 or until CAW complies with State Water Resources Control Board (SWRCB) Order 95-10, whichever occurs first.

**Attachment 1** shows the ranking that the participants at the NMFS workshop assigned to each of the proposed restoration projects in the second column under "NMFS Rank". As part of the workshop, the participants developed eight criteria for ranking the proposed restoration projects. These criteria included:

- Greatest and most immediate benefits to steelhead
- Correlation to CAW water withdrawals, both direct and indirect
- Addresses limiting factors in the watershed

- Cost versus benefits
- Direct benefit to increased steelhead population size
- Ability to produce large juveniles and smolts
- Time to implement
- Contribution toward knowledge for recovery plan

The estimated cost and time to implement the proposed restoration projects shown in **Attachment 1** were taken from the **Attachment 2**. Note that some of the costs are one-time costs and some of the costs are annual costs or costs per structure. Similarly, some of the time estimates are per structure.

**Attachment 1** also shows proposed restoration projects or actions from the CRWC 2006 Action Plan that complement the proposed projects developed in the NMFS workshop. These actions are shown in the fourth column under “CRWC Action Plan Item”. The *2006 Action Plan Revision* was prepared in October 2006 by Tamara Doan of the Coastal Watershed Council and Monica Hunter of the Planning and Conservation League Foundation with guidance and assistance from the CRWS Technical Advisory Committee (TAC). The proposed actions in the *2006 Action Plan Revision* were originally developed as part of the 2002 Carmel River Watershed Assessment and Action Plan and are summarized in matrix form (**Attachment 3**). Note that this matrix includes eight categories of actions -- cross-cut, flows, groundwater, habitat, public safety, public outreach and education, sediment, monitoring – in addition to a steelhead category.

As shown in **Attachment 3**, the matrix includes details of the proposed action, the problems that the action addresses, benefits from the action, lead organization or agency, key partners, estimated cost, permits required, potential funding, TAC ranking within each category, and the watershed area or tributary in which the action would be focused. As indicated above, each CRWC action that is shown on **Attachment 1** was selected from the *2006 Action Plan Revision* because it is consistent with and supports, in part or whole, the associated restoration project proposed by the NMFS workshop participants. For example, the CRWC action MON-1 that is shown with the NMFS Lagoon Reverse Osmosis Project calls for “develop an adaptive management program for water quality in the lagoon, including installing an automated water quality monitoring station in the lagoon; coordinating with Carmel Area Wastewater District (CAWD) for discharge of tertiary water into the lagoon ...”.

**MPWMD Recommended Spending Priorities:** Based on the information and criteria developed by the NMFS workshop group and the information and rankings developed by the CRWC and its TAC, District staff merged the two lists of proposed restoration projects and ranked the projects based on spending priority. District’s staff ranking of the projects is shown in the first column of **Attachment 1** under the “MPWMD Heading”. District staff’s ranking are similar to the NMFS rankings and differ only in the middle group.

Based on the assumption that the funding for the proposed projects would be provided by CAW for steelhead restoration under the 2006 settlement agreement with NMFS, District staff focused on restoration projects that would benefit the steelhead resource in the Carmel River watershed in the next seven years, i.e., 2006 through 2013, and could be funded. For example, while District staff believes that dredging Los Padres Reservoir would provide significant benefits, the cost of dredging would exceed the amount of funding available under the settlement agreement.

Lastly, it should be noted that the *2006 CRWC Action Plan* included four actions or group of actions that did not complement the restoration projects proposed by the NMFW workshop participants. Although these actions were not listed by the NMFS workshop participants, District staff believes that these actions are important. These actions include, in rank order, SH-4, 5 and 9, SH-2, SH-3, and SH-1. Details of these actions are provided in **Attachment 3**.

cc: Larry Hampson      Water Resources Engineer  
Kevan Urquhart      Senior Fishery Biologist

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**Recommended Spending Priorities for Restoration of the Carmel River Steelhead Resource  
March 2007**

MPWMD Rank	NMFS Rank	Proposed Restoration Projects	CRWC Action Plan Item	Estimated	
				Cost	Time
1	1	Lagoon Reverse Osmosis Water Project	MON-1	\$50,000	1 to 3 years
2	2	Sleepy Hollow Steelhead Rearing Facility Water Intake Upgrade	---	\$570,000	1 to 2 years
3	5	Old Carmel River Dam Removal	SH-5	\$300,000 to \$500,000	---
4	6	Sediment/Gravel Injection	HAB-1; SH-7	\$60,000 to \$100,000 per year	1 year
5	4	Carmel River Enhancement - Mainstem, tributaries, and lagoon	HAB-3, 4, and 6; SED -1	\$10,000 to \$30,000 per habitat structure	1 year per structure
6	3	Los Padres Dam Fish Passage	SH-6 and 8	---	up to 5 years
7	7	Los Padres Reservoir Sediment and Organic Debris Removal	FLows-2 and 3	\$25,635,000	---
8	8	Natural Broodstock Program	---	\$60,000 to \$100,000 per year	3 years
9	9	Barrier Beach Sediment Budget Analysis	---	\$125,000	1 year

Notes:

1. The proposed mitigation projects were developed at a workshop on November 18, 2005, that was conducted by the National Marine Fisheries Service (NMFS) and included representatives from California American Water (CAW), Monterey Peninsula Water Management District (MPWMD), Carmel River Steelhead Association (CRSA) and the Carmel River Watershed Conservancy (CRWC). Representatives from California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and the Sierra Club were invited, but unable to attend.

2. The "CRWC Action Plan" items refer to actions originally described in the 2002 *Carmel River Watershed Assessment* developed by the CRWC and later ranked by the CRWC's Technical Advisory Committee in 2006. "MON, SH, HAB, SED, and FLOWS" refer to actions related to monitoring, steelhead, habitat, sediment, and flow, respectively. Each of the CRWC actions listed is consistent with the associated NMFS proposed mitigation project.

**Potential Mitigation Projects Resulting from Mitigation Workshop,  
November 18, 2005**

**Background**

In response to ongoing illegal take of steelhead, Amanda Wheeland of NOAA General Counsel, requested the California American Water Company (Cal-Am) fund potential mitigation projects on the Carmel River to improve habitat conditions for steelhead until a long-term water supply project is constructed, *e.g.*, a desalination plant. Cal-Am asked to meet with National Marine Fisheries Service (NMFS) to discuss this issue, and as an outcome of this meeting, NMFS agreed to conduct a Mitigation Workshop, which took place on November 18, 2005. In attendance were Cal-Am, NMFS, Monterey Peninsula Water Management District (MPWMD), and members from the Carmel River Steelhead Association and the Carmel River Watershed Conservancy, all local agencies and groups knowledgeable in Carmel River steelhead issues. California Department of Fish and Game, US Fish and Wildlife Service, and the Sierra Club were invited but unable to attend. The goal of the workshop was to produce a list of potential mitigation projects that would improve the survival of steelhead in the Carmel River in this interim period before a water project is constructed.

**Condition of the Carmel River**

Historically, the Carmel River was one of the most productive steelhead rivers along the California Coast. The watershed encompasses 255 square-miles in the Santa Lucia Mountain range. In the upper watershed, the river and its tributaries flow in deep, steep-sided canyons. For its last 15 miles, the river flows across the relatively flat Carmel Valley floor to the Pacific Ocean.

In the lower river, there are a number of wells, which pump water from the underflow of the Carmel River. Cal-Am operates 21 of these wells and is the largest holder of water rights on the river. Cal-Am has a legal water right for 3,376 acre-feet (AF) and illegally diverts an additional 10,730 AF from the Carmel River. The State Division of Water Rights has ordered Cal-Am to find an alternate source for this illegal amount (Order No. WR 95-10). Additional wells are operated privately under much smaller water rights. Of these additional wells, the State Division of Water Rights has identified 14 as major diverters who cumulatively divert up to 1,729 AF annually from the underflow of the Carmel River. As a result of these withdrawals, the Carmel River usually goes dry downstream of river mile (RM) 7 by July. On average, over the past 10 years, 121 fish per 100 feet have occupied the stretch of river that dries up. Extrapolating out this average density, excessive water withdrawals eliminate habitat for approximately 44,700 juvenile steelhead each year.

In 1990, MPWMD certified the Water Allocation Program Final Environmental Impact Report (EIR) which set water allocation limits for annual Cal-Am water production (Jones and Stokes 1998). The EIR included a mitigation program to mitigate for

significant environmental impacts from Cal-Am's diversions. This mitigation plan provides for: (1) expansion of the program to capture and transport smolts during spring; (2) prevention of stranding of early fall and winter juvenile migrants; (3) rescuing of juveniles downstream of Robles del Rio during summer; and (4) implementation of an experimental smolt transport program at Los Padres Dam (MPWMD 1999).

Under this program, the Sleepy Hollow Rearing Facility (SHRF) was constructed in 1997 to hold and rear juvenile steelhead rescued during the summer months when the lower reaches of the river become dry. The SHRF endured power-outages, predation by birds and fish, warm water conditions, and pump failure due to sediment uptake in the past few years. While Cal-Am is finding a new source of water, they continue to overdraft from the Carmel River, making the SHRF integral in ensuring steelhead survival. NMFS is working with MPWMD to establish a hatchery genetic management plan (HGMP) for the facility.

Each year, MPWMD and local volunteers rescue stranded steelhead as the lower 7 miles of the river dry up, transporting the rescued steelhead to the lagoon, upstream habitat, or the SHRF. Approximately 2% of rescued fish and 100% of unrescued fish die, resulting in lethal take associated with the drying river in addition to the non-lethal impacts to all steelhead rescued from those 7 miles.

Cal-Am is responsible for maintaining three dams along the Carmel River, the San Clemente (SCD), Los Padres (LPD), and Old Carmel River Dams (OCRD). SCD is 108 ft high, was completed in 1921, and was originally a year round water diversion but now is used for winter flow diversions. LPD, completed in 1949, is 148 ft high with a current reservoir capacity of approximately 1,425 AF and is located about 5 miles upstream of SCD. During the low flow season when LPD is not spilling, water is released downstream at a minimum rate of 5 cfs from the Los Padres Reservoir. OCRD, completed in 1883, is located about 1800 feet downstream of SCD, has no utility, but is shorter at 20 feet in height. A fish ladder on the south side of SCD was constructed when the dam was built. A trap and truck operation is used at LPD to pass fish over the dam. OCRD has a fish ladder on the south side that does not function well. A notch was cut in the north side of OCRD in an effort to increase fish passage, but the notch is too narrow and during high flows is a velocity barrier.

Below San Clemente Reservoir and Los Padres Reservoir, which capture sediment bedload, the river became incised and armored. Armoring is common downstream of dams and occurs as fine riverbed materials are washed out, leaving coarse materials that prevent further erosion of the riverbed (except during the largest floods). The process of incision and armoring below SCD continued until about 1940, when a new dynamic equilibrium was established. This incision increased the depth and speed of water flow and the rate of bank erosion; although erosion was limited by the growth of riparian vegetation along the newly cut banks (Jones and Stokes 1998). The increased development within the floodplains created a greater emphasis on flood protection and preventing bank erosion, resulting in the placement of hard structures such as rip-rap, concrete rubble, cement walls, and cars along about 40% of the lower river. The bank

protection measures have further degraded the habitat value of much of the lower 18 miles of river.

Spawning gravels below SCD and LPD have been washed downstream with high flows but have not been replaced because the reservoirs trap the bedload from upstream. As the gravels are washed from the system, riffles are changed or eliminated, which reduces the production of food organisms for rearing steelhead. Gravels provide habitat for emergent fry, which initially move to shallow point bars and other depositional areas to grow. Since adult returns are about three percent of their historic amounts, spawning gravels are not likely limiting at this time, but they are significantly reduced so slight increases in adult returns would make them a limiting factor. The reduced amount of food provided by aquatic invertebrate production in gravels may be limiting steelhead growth and survival.

Over 90% of the average annual precipitation within the Carmel River watershed occurs between November and April, with January and February being the wettest months. In the rainy season, Los Padres Reservoir refills after being drained by minimum flows during the summer. Because of water withdrawals from the aquifer underlying the river, the lower mainstem of the river remains dry until there are sustained flows of approximately 400 cfs past the dams for several days.

Water withdrawals from the Carmel River cause two important delays to steelhead migration. First, fall migrating smolts living upstream would normally begin swimming downstream with the first rains of the fall. Ward *et al.* (1989) noted that the largest smolts migrate on average 10 days before the peak smolt migration. The largest smolts rearing in the upper Carmel River watershed have the best chance of ocean survival, but are delayed up to 6 weeks some years due to lack of water in Los Padres Reservoir and the in lower mainstem river. Second, the lagoon breach is delayed because the underflow of the river is refilled before the lagoon begins filling. Under natural conditions, the water table in the fall would be above the river bed or just below it, resulting in nearly instantaneous passage of fall flows to the lagoon. The delay in inflow to the lagoon and resulting delay in breaching depends on the size of the early fall storms.

The Carmel River lagoon is a naturally occurring lagoon and wetlands area located at the mouth of the Carmel River, where the river flows to the Pacific Ocean at Carmel Bay. Lagoons provide essential rearing habitat for juvenile steelhead along California's central coast. Smith (1996) estimated that the lagoon on Pescadero Creek, just north of the Carmel River, provided as much rearing productivity as 8 miles of upstream habitat. The lagoon functions best when inflows are sufficient to maintain the water quality in the lagoon. As a result of Cal-Am's illegal pumping upstream, there is very little inflow to the lagoon during the low flow season. When inflow to the lagoon is low, the water quality at the bottom of the lagoon is poor, forcing steelhead to live at the surface in the only non-lethal water available. The summer conditions in the lagoon result in increased predation, stress, mortality, reduced growth, and delayed mortality of steelhead.

Approximately 70% of Carmel River spawning and rearing habitat is located upstream of

LPD, and approximately 90% above SCD (Snider 1983). Currently, about 55% of adult steelhead spawn downstream of the dams, about 45% migrate over SCD, and only about 11 to 16% are transported above LPD. One reason for the altered utilization of the river could be upstream passage issues with the dams causing too much stress resulting in reduced survival or spawning success. Other reasons could be juvenile and kelt mortality caused by downstream migrations over three dams, delayed migrations, or delayed mortality caused by stress. Densities of steelhead rearing above Los Padres Reservoir were assessed by Kelley (1983) to be one-third that of comparable-sized rivers.

Many aspects of the Carmel River are functionally degraded and should be repaired in order for steelhead populations to reach their historic abundances. Steelhead rearing success may be negatively impacted by lack of food, lack of cool-water refugia and pools, lack of gravel and sediment, seasonal lack of water in parts of the river, lack of large woody debris (LWD), poor water quality in the river and the lagoon, unnatural breaching of the lagoon, predation, and hardened stream banks. Steelhead spawning success may be negatively impacted by the Allee effect (trouble finding a mate), lack of spawning gravels, impeded access to historic spawning areas, and lack of adult steelhead habitat. Migration of adult and juvenile steelhead is negatively impacted by dams, the seasonally dry river bed, lack of resting pools, inadequate fish passage facilities, and long stretches of homogenous habitat.

NMFS determined there are four broad, primary limiting factors that contribute to the decline of Carmel River steelhead more so than any other factors. The most important issue in the watershed is seasonal lack of water and flow in the river, caused by excessive pumping in the lower river, eliminating historically productive rearing habitat and critically impairing the lagoon water quality. The second biggest problem in the Carmel River watershed is the lagoon, due to lack of water inflow in the summer, again as a result of excessive water withdrawals. Under natural conditions, the lagoon provides excellent rearing habitat and higher densities of rearing steelhead than anywhere else in the river. Impaired fish passage, the third limiting factor, limits access to the best spawning and rearing habitat, which is located above LPD. The system as a whole is also fragmented by two other dams and a long stretch of dry river in the summer, eliminating connectivity between the reaches. Degraded habitat in the lower mainstem river, the fourth limiting factor, also limits the Carmel River steelhead population, since steelhead naturally move to mainstem habitats to grow larger in preparation for the adult portion of their lives. This section of river now is dry for several months of the year and when it is wet, has limited food supply, and the homogenous habitat provides minimal refuge from predators. The mitigation projects are ranked according to their potential to address these four primary limiting factors and increase steelhead populations most efficiently. Proposed projects that didn't meet these criteria are ranked at the bottom of the final list or were eliminated altogether.

## **Proposed Restoration Projects**

### **1. Lagoon Reverse Osmosis Water Project**

*Proposal:* Cal-Am's pumping operations dry the river upstream of the lagoon, confining steelhead to the area downstream of the Highway 1 Bridge and causing the lagoon water level to drop, the water quality to worsen, and leaving steelhead more stressed and more susceptible to predators. Between 8,000 and 25,000 juvenile steelhead rear in the Carmel River lagoon each year, but under natural conditions, steelhead would move between the lagoon and the lower mainstem Carmel River depending on where optimal habitat could be found. Mortality in the lagoon is currently unknown, but is expected to be the highest of any location in the Carmel River.

The Carmel Area Wastewater District recently proposed the second phase of their Salinity Management Project, which plans to use reverse osmosis to make water for use on seven golf courses on the Monterey Peninsula. This project would generate water as waste that could be allowed to flow into infiltration ponds, constructed upstream of the South Arm of the lagoon in the Odello West fields. The water should indirectly raise lagoon levels as it filters through the sand beneath the ponds and into the aquifer. The additional water will improve the water level of the Carmel River lagoon during the summer juvenile steelhead rearing phase.

*Biological Response:* After completion of this mitigation project, the Carmel River lagoon will receive water inflow of 1.5 AF per day (approximately 3 cfs) via groundwater seepage during summer low flow periods. When the inflow to the lagoon is sufficient to maintain good water quality, the Main Bay, South Arm, and North Arm provide habitat for steelhead and refuge from predators. It is reasonable to expect increased survival and smolt size, which will improve ocean survival and adult returns.

*Funding Costs:* This project would have a one-time estimated cost of approximately \$50,000 for constructing ponds and a water delivery system to the ponds.

*Conclusions:* This project addresses three primary limiting factors: low flows in the river, fish passage, and lagoon water quality. The project is expected to result in increased growth and survival of many steelhead in the first year of its implementation. There is also the potential to relocate more rescued fish to the lagoon as opposed to other locations. This project is ranked as the top mitigation priority because it addresses three primary issues of concern, benefits many steelhead for little money, and will be ready to implement in the next two to three years.

## **2. Sleepy Hollow Steelhead Rearing Facility Water Intake Upgrade**

*Proposal:* As Cal-Am pumps the lower river dry, MPWMD conducts steelhead rescues, transporting approximately 25,000 juvenile steelhead to the SHRF to be reared for approximately 6 months. The SHRF currently gets its water directly from the river via two submersible pumps, which could be damaged or destroyed if sediment enters through the water intake entrance. Turbidity in the Carmel River during high flows is enough to damage the pumps. Several years ago, the pumps failed due to sediment uptake so the facility was not used that year. Currently, to avoid the risk of sucking sediment into the pumps, all of the steelhead in the SHRF are released before high, turbid flows begin in

the late fall when parts of the river are sometimes still dry and disconnected from the lagoon. Releasing these fish in the fall creates competition for food and potentially space between the SHRF smolts and the resident smolts until the river is connected to the lagoon.

The proposed solution to this problem is to construct an underground, 80 square foot concrete settling basin, which will allow 98% of all sediment to settle out before pumping the water into the SHRF. This project will allow the SHRF to function in high flows so steelhead can be kept in the facility until the river is flowing to the lagoon. Access to the facility needs to be available year round, so the low water crossing to the facility will also need to be improved.

*Biological Response:* The MPWMD could release the smolts late in the season, when the lower river is completely rewetted so the SHRF smolts could emigrate directly to the ocean and avoid competition with resident smolts, increasing survival and fitness of all smolts.

This is viewed as a short-term solution, since, generally, there are problems associated with rearing facilities. The facility attempts to rear the steelhead in as natural a setting as possible, so they are similar to wild steelhead when they are released. However, there are extensive studies concerning the behavioral differences between wild steelhead and wild-origin steelhead raised in a hatchery environment (see Huntingford 2004 for overview). According to Huntingford (2004), steelhead produced in the wild, reared in facilities, and then released into the wild exhibit different feeding, anti-predator responses, aggression, and reproductive behavior than their counterparts rearing in the wild. Improvements at SHRF are needed to ensure survival and recovery until an alternate water supply is developed.

*Funding Costs:* Estimated costs for improvements would be a one-time cost of \$570,000 for the settling basin and water intake, and additional costs for the water crossing improvement.

*Conclusion:* This project addresses three primary limiting factors: low flow in the river, fish passage, and degraded mainstem habitat. These limiting factors are addressed by producing large, healthy smolts rescued from low flows, which can be released late enough to pass unobstructed to the ocean, avoiding temporary residence in the degraded lower mainstem river. This project is considered the second most important project because it addresses three issues of concern, can benefit over 20,000 juvenile steelhead each year, only has a one-time cost associated with it, and can be implemented in the next year or two.

### **3. Los Padres Dam Fish Passage**

*Proposal:* The habitat upstream of LPD provides approximately 70% of the spawning and rearing habitat in the Carmel River, but few adult steelhead make it to this area. When the dam was completed, the only upstream passage for steelhead was a short fish

ladder that led to a holding facility, where fish were trapped and then trucked over the top of the dam. Subsequently another ladder and trapping facility were constructed below the dam for upstream passage, along with a 9.5-inch by 36-inch notch in the spillway for downstream passage.

Passage at LPD is not adequate for up or down stream migration. Passage conditions need to be improved to increase the adult returns to spawning grounds above LPD. There is a need for: 1) an engineering study that could determine the best method to achieve both upstream and downstream passage; and 2) construction of a fish passage structure identified in the engineering study.

*Biological Response:* Building a passage facility for upstream and downstream migrating steelhead will allow adult steelhead to spawn in the mainstem and tributaries above LPD and increase the survival of kelts, smolts, and juveniles migrating downstream. This project would provide a long-term solution to a major problem on the Carmel River, increasing the overall Carmel River steelhead population.

*Funding Costs:* The cost of this will depend on the engineering study's cost determination for a facility that provides safe upstream and downstream passage.

*Conclusion:* This project addresses two primary limiting factors: fish passage and degraded mainstem habitat, since historically fish reared in the headwaters and migrated to the mainstem as smolts and pre-smolts to grow more before entering the lagoon. The increased returns above LPD would increase spawning, allowing for use of the rearing habitat above LPD, and resulting in a significant increase in the number of smolts produced. Improved downstream passage would increase smolt health and survival, increasing the numbers of adults able to return to the headwaters of the Carmel River in future generations. This project is considered important because it addresses two issues of concern and could benefit a large portion of the Carmel River steelhead population. The expense of upstream and downstream passage is expected to be considerable and could take up to five years to complete the project.

#### **4. Carmel River Enhancement – Mainstem, tributaries, and lagoon**

*Proposal:* Much of the problem between SCD and the mouth of the Carmel River is related to the sediment trapped behind both SCD and LPD, resulting in an armored streambed lacking structure and heterogeneity below the dams. The degraded rearing habitat impacts juvenile abundance; therefore, improvements in habitat quality should improve juvenile abundance and growth rate. Instream habitat structures would be constructed in areas that are armored, lacking pools, and/or recommended by a hydrologist or geomorphologist to increase juvenile steelhead rearing habitat and adult resting pools. The structures should be designed to withstand a 100-year flood event and to prevent bank erosion, while scouring or maintaining pools and creating spawning and rearing habitat.

*Biological Responses:* Large pools provide thermal refuge for steelhead during the

summer months (Matthews and Berg 1997) and the tailouts provide well sorted gravels for steelhead spawning and macroinvertebrate production. These structures have been monitored in other systems and have been shown to provide statistically significant increases of between 1.5 and 6 times more steelhead (Paulsen and Fisher 2005, Roni and Quinn 2001, Diez *et al.* 2000, Kiefer and Lockhart 1999, Bisson and Bilby 1998, Bilby and Bisson 1998, Espinosa and Lee 1991). Jones and Tonn (2004) analyzed longer reaches though, and found the instream structures may condense all fish in the reach into the optimal habitat, vacating the mediocre to poor habitat, but not increasing carrying capacity. Winter rearing habitat is plentiful in the Carmel River, so these structures will be intended to increase summer rearing success (Morgan and Hinojosa 1996).

*Funding Costs:* One-time estimated cost for permitting, engineering plans, and project monitoring of \$10,000 to \$30,000 per habitat structure.

*Conclusions:* This project addresses two primary limiting factors: degraded mainstem habitat and the lagoon condition. The potential for the instream structures to provide optimal habitat are well documented in past studies. Structures could be installed in the mainstem of the Carmel River and in the lagoon to create habitat and benefit both areas. Monitoring of structures should focus on overall change in steelhead densities within the reach, at the structures, and the change in the size of the steelhead in the reaches. Constructing instream structures ranks fourth in priority of mitigation work because it addresses two issues of concern, each structure is very inexpensive for the potential benefit to rearing fish, and the structures can be designed and built in one year.

## **5. Old Carmel River Dam Removal**

*Proposal:* Currently, there is a small notch in the north side of the OCRD, but during high flows, the water flowing through the notch creates a flow barrier. The thickness of the dam makes it very difficult for steelhead to jump and swim over during high flows as well. If adult steelhead spend too much energy navigating the barriers, they may die without spawning or suffer reduced reproductive fitness. Juveniles and kelts also suffer delayed mortality and reduced growth as a result of navigating dams on their downstream migration (Budy *et al.* 2002). The survival of kelts is particularly beneficial to the overall steelhead population because they return and spawn again, basically doubling their reproductive contribution compared to one-time spawners.

As part of Cal-Am's SCD Seismic Safety Project EIS/EIR, Cal-Am has proposed to cut a larger notch in the OCRD. The mitigation proposal being considered here would completely remove the OCRD during the Seismic Safety Project rather than cutting a larger notch.

*Biological Response:* Removing the OCRD would result in a natural stream channel, reducing stress and potential delay of migration, resulting in less mortality and better health of upstream and downstream migrants.

*Funding Costs:* One-time cost for permitting, engineering, and demolition of the dam of

would be in the range of \$300,000 to \$500,000.

*Conclusion:* This project addresses two primary limiting factors: fish passage and mainstem habitat degradation. This project would benefit adult steelhead returning to spawn, which are relatively more important than individual juvenile steelhead to the population. This project is considered important because it will inexpensively benefit returning adults every year after the dam is removed.

## **6. Sediment/Gravel Injection**

*Proposal:* In the past 80 years, San Clemente and Los Padres Reservoirs have trapped over 3,000 AF of sediment ranging from sands and silts to cobble and small boulders. Downstream of both dams, this has resulted in an armored stream channel and banks, degraded channels, and lack of invertebrate and fish habitat. The purpose of this project would be to dredge sediments and gravels from San Clemente Reservoir and/or Los Padres Reservoir and deposit the sediment into the river below each dam. The gravel would be placed along the edges of the river and in the plunge pool during low flows and would be distributed naturally during high flows to natural depositional areas.

*Biological Response:* Injecting 2 to 4 AF of gravels annually below each dam will increase the potential spawning habitat in the river (Wheaton *et al.* 2004) and will also increase macroinvertebrate production (Merz and Chan 2005, Death 2003, Bisson and Bilby 1998). Gravel injection projects have been studied in the past, revealing that spawning gravel enhancement projects result in significantly higher numbers of steelhead parr produced (Merz *et al.* 2004, Espinosa and Lee 1991).

Gravel injection and instream structure projects conducted coincidentally in streams lacking gravels and structure but not macroinvertebrates resulted in 1.5 to 6 times more juvenile steelhead than before enhancement (Keifer and Lockhart 1999, Espinosa and Lee 1991). The Carmel River is deficient in gravels, structures, and also macroinvertebrates. This project is expected to cause similar increases in steelhead density and may also increase their size since aquatic invertebrates are particularly important to California steelhead (Merz 2002). This project will increase steelhead populations if sufficient gravels are placed downstream of the dams.

*Funding Costs:* Estimated cost to inject 2 to 4 AF of gravel downstream of LPD and SCD approximately \$60,000 to \$100,000 annually. This could be conducted in conjunction with the dredging project for LPD, which would make both projects more cost effective.

*Conclusion:* This project addresses one issue of concern, which is mainstem habitat degradation. Monitoring of similar projects suggests that gravel injection is a good way to increase egg to juvenile survival and will increase macroinvertebrate production (McHenry *et al.* 1994). In the immediate future, gravel injections are more likely to provide benefits to juvenile fish by increasing macroinvertebrate production and in the more distant future the gravels will provide spawning habitat for adults. This is the sixth

ranked mitigation project because it addresses one issue of concern, benefiting many young-of-the-year steelhead, a moderate number of larger juveniles, and some adults for a moderate amount of money each year. The project could be implemented next year.

## **7. Los Padres Reservoir Sediment and Organic Debris Removal**

*Proposal:* The Los Padres Reservoir provides minimum summer flows, releasing approximately 1,100 AF each year. Over the past 56 years, the reservoir has partially filled with sediment and debris, reducing the storage capacity from 3,030 AF to about 1,425 AF. The proposal for this project is to dredge Los Padres Reservoir to reclaim storage capacity, which would allow for higher summer releases keeping more water flowing farther downstream during the summer and fall.

*Biological Response:* This project would nearly double the volume of the reservoir, so 2,700 AF could be passed downstream during a summer. Allowing the Carmel River to flow farther downstream before going dry would protect steelhead and their critical habitat, eliminating the need for fish rescues in the area.

*Funding Costs:* One-time cost for permitting, engineering design and dredging. There may be a potential to sell aggregate to recover some costs. The most expensive sediment removal cost is estimated at \$9.90/cubic yard (per MWH). If the reservoir were dredged of the approximately 1,605 AF of sediment that has entered since 1949, that would amount to 2,589,400 cubic yards of sediment. The cost of this removal would be \$25,635,060. Some of the recovered sediment could also be used to supplement spawning gravels downstream of the dams, reducing the costs associated with hauling. There would also be the issue of finding a disposal site for the unused sediment, which could add costs to this project.

*Conclusion:* This project addresses two primary limiting factors: downstream habitat and flow in the river. This is an important project because it addresses two issues and protects several thousand juvenile steelhead each summer. The price of removing the sediment and the timeframe to begin the project cause this project to be ranked lower than those in front of it.

## **8. Natural Broodstock Program**

*Proposal:* This proposal is a safety net in case of extreme drought years or in times of habitat destruction sufficient to prevent natural spawning (e.g. dam failure). During normal years, when adults can migrate to the river from the ocean, this project will not occur. The wild broodstock program would go into effect in the second year of a major drought, after one year of no passage between the river and the ocean. In the second year, the wild broodstock program would capture smolts throughout their downstream migration to gather as diverse a genetic pool as possible. The captured smolts will be raised in a saltwater tank at a location to be determined and once mature they would be released into either Carmel Bay, Carmel River lagoon, or into the river directly if drought has made entry from saltwater impossible.

The project will be part of the HGMP and a technical advisory committee (TAC) would determine the period, locations, and methods of capture. Fish that are hatched and reared in facilities before being released are at a competitive disadvantage to wild fish relative to feeding, antipredator response, aggression, and reproductive behavior (Huntingford 2004, Berejikian *et al.* 1996). Our goal is to retain wild fish without any hatchery or rearing facility influence, but we understand that without the wild broodstock program, extreme events could cause extirpation of *O. mykiss* genetics with a propensity for anadromy (Thrower *et al.* 2004).

*Biological Response:* This project will retain Carmel River steelhead genetics in the event of a drought or catastrophic event. In most years, the natural broodstock program will not be necessary, but a plan will be developed as part of the HGMP in case of a catastrophic drought.

*Funding Costs:* The broodstock program will have overhead costs associated with it. Volunteers would be used to operate the facility. Funds would be needed to cover the cost of the facility, food, collection device, *etc.* The overall cost for one year of operation is estimated at \$60,000 to \$100,000.

*Conclusions:* This project addresses one issue of concern, which is lack of flow. Major droughts threaten the existence of steelhead in this system. Preserving the unique genetic qualities of anadromy, run timing, and outmigration timing would be key components to this project. This project may be the only way to maintain a steelhead run in the Carmel River during emergency situations. This project ranks eighth on the list because it addresses one issue of concern during emergencies only. The cost will be fairly inexpensive for saving steelhead during droughts or catastrophes and it could be implemented in three years.

## **9. Barrier Beach Sediment Budget Analysis**

*Proposal:* Over the past century, the barrier beach at the mouth of the Carmel River may have become narrower. The width of the barrier beach is critical to the health of the lagoon and the private properties nearby. If the beach is getting narrower, there are concerns that the lagoon may cease to function or may become a tidal inlet. This proposal would design a sediment transport analysis between upstream bedload and the marine environment to determine the long-term trends of sediment replenishment at the barrier beach.

*Biological Response:* The barrier beach at the mouth of the Carmel River is vital to maintaining a lagoon for rearing of smolts and juveniles throughout the year. Understanding the dynamics of sediment transport to the barrier beach will help determine methods to ensure the lagoon remains functional to support steelhead. Better knowledge of sediment transport from the river to the beach will lead to better management of the lagoon, the beach, and the surrounding property.

*Funding Costs:* Estimated one-time cost for the sediment transport analysis of approximately \$125,000.

*Conclusion:* This project addresses one issue of concern, which is the condition of the lagoon. Funding the study would not directly benefit any fish, but the study would assist regulatory agencies in making decisions about lagoon management, which would benefit steelhead in the future. This project ranks ninth because it addresses one issue of concern but will not directly benefit any fish. The cost of the study is not very expensive and planning could begin next year.

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# Carmel River Watershed Assessment & Action Plan

## 2006 Action Plan Revision

Conducted by the Carmel River Watershed Conservancy with guidance and assistance from an assembled group of the Carmel River Technical Advisory Committee (TAC)

Included herein is the final matrix of the Carmel River Action Plan items, originally included as part of the 2002 Carmel River Watershed Assessment & Action Plan, provided for the purposes of inclusion into other relevant documents.

Prepared for the Carmel River Watershed Conservancy by,  
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&  
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Planning and Conservation League Foundation

October 9, 2006

	NEW ACTION PLAN #	Orig ACTION PLAN #	Details	Problems addressed	Benefits to be achieved	Lead Org/ Agency	Key Partners	Est. Cost	Permits required	Potential Funding Sources (Funding Organization)	Project Ranked by TAC, within each category (1=TOP PRIORITY)	Watershed Area/ tributary to focus specific action on:
<b>CROSS-CUT ITEMS (3)</b>												
1	CC-1	CC-6	Create a Carmel River Watershed Task Force that is open to all stakeholders. The purpose of this group will be to achieve the successful outcome of watershed projects identified in this plan and address other needs in the watershed. This group should function as advisors for projects to review and provide input that reflects local priorities, creates cooperative management strategies, and incorporates local experience to help identify potential problems and solutions.	Need for coordinated effort to address watershed issues	Better coordination and a vehicle to lead or assist in successful implementation of the actions identified in this plan	CRTF	CRWC, MPWMD, CRSA, BSLT, VWS, NOAA, USFWS, CDFG, SCC, RWQCB, RCD, NRCS, MCWRA, County DPW, landowners, USFS, etc.	\$50,000/year	No	CDFG, private foundations, American Rivers, RLFF, CalAM	1	
2	CC-2	CC-1	Acquire or accept, in fee title or easement, lands that provide multiple benefits to the watershed such as: improving natural habitat and functions, facilitating recovery of listed aquatic and terrestrial species including Steelhead trout and CRLF, reduce flood and erosion risk, and improve public access.	Loss and degradation of natural habitat; erosion and flood risk; limited public access	Protect and restore natural habitats; protect riparian buffers; provide opportunities for restoration; expand park area; increase flood protection	BSLT, MPRPD	Cal-Am, Willing Private Property Owners, TNC, FWS, local jurisdictions	Varies; depending on appraised valuation	No	SCC, WCB, MPRPD, SWRCB, DWR, CDFG, private sources	2	
3	CC-3	CC-NEW(from HAB)	Establish a watershed work program with the Californian Conservation Corps, or other outside work groups, to assist the Carmel River Task Force, the Carmel River Steelhead Association and the Carmel River Watershed Conservancy and other community groups and volunteers in habitat restoration projects.	Impaired habitat	Improved habitat	CRWC, CRSA	California Conservation Corps	5-10K; varies by projects annually	No	NOAA Restoration Center; CDFG; American Rivers; Cal-Trout	3	
<b>FLOWS ACTIONS (5)</b>												
4	FLOWS-1	FLOWS-1	Support implementation of a water supply project that minimizes the export of water from the Carmel River basin that causes the chronic reduction in flow and meets the goals of State Water Resources Control Board Order 95/10.	Overdraft, degradation of riparian function including: habitat loss and associated impacts of degradation on wildlife and aquatic species; loss of recreation and public access.	Continuous flow in the main stem and tributaries, recovery of sensitive species and riparian habitat, complies with State Order 95-10, increased Carmel River flow to Lagoon in many years	Cal-Am, MPWMD	State, Federal and local agencies - NOAA, USFWS, CDFG, DWR; SWRCB, CCRWQCB, PUC, MCo, and interested groups and non-profits.	\$150- 200 million	N/A	MPWMD, CalAM, DWR	3	
5	FLOWS-2	FLOWS-2	Develop a project to maintain or increase surface water storage at Los Padres Dam Reservoir (LPD) until it is no longer needed to maintain summer flows for fish; including but not limited to dredging or excavation to remove sediment upstream of the dam or installing a rubber dam.	Lack of summer stream flow	Increased stream flow in low flow periods, increase water storage and reduce possibility of drying up of the lower reaches of the river	Cal-Am, MPWMD	Gravel extraction companies	needs feasibility study	Yes	CalAM, DWR, NOAA Fisheries,	4	

6	<b>FLOWS-3</b>	<i>FLOWS-3</i>	Study the feasibility of installing a rubber dam at LPD to temporarily increase water storage during the spring of each year. This would slow the drying up of the lower reaches of the river in a normal water year.	Reduction in surface storage capacity; passage impairments	Increased stream flow in low flow periods; improved migration of salmonids	Cal-Am, MPWMD	Cal-Am/MPWMD; State, Federal and local agencies - NOAA, USFWS, CDFG, DWR; SWRCB, CCRWQCB, PUC, MCo; and interested groups and non-profits.	\$250,000	Yes	CalAM, DWR, NOAA Fisheries,	<b>5</b>	
7	<b>FLOWS-4</b>	<i>FLOWS-4</i>	Support improvements to the MPWMD's Aquifer Storage and Recovery (ASR) Project to reduce the amount of water extracted from the Carmel River Basin during summer months.	Overdraft, degradation of riparian function including: habitat loss and associated impacts of degradation on wildlife and aquatic species; loss of recreation and public access	Continuous flow in the main stem and tributaries, recovery of sensitive species and riparian habitat, complies with State Order 95-10, increased Carmel River flow to Lagoon in many years	MPWMD	Cal-Am	Ph.I = \$3 million, Ph. II unknown, potentially \$10-\$20 million	Yes	CalAM, DWR, MPWMD	<b>1</b>	
8	<b>FLOWS-5</b>	<i>CC-7a</i>	Expand water conservation programs to all areas of the watershed, including rebates for low flow fixtures & encouraging drought tolerant landscaping. Use MPWMD water conservation program as a model.	Insufficient flows in the river and tributaries	Increased flows in the river & tributaries, increased aquatic habitat availability	CRWF/CRWC, MCo	MPWMD; CalAM, MC, landscaping & contractors professional associations	\$250K/yr	No	DWR, CalAM, Rate payers,	<b>2</b>	

**GROUNDWATER ACTIONS (3)**

9	<b>GW-1</b>	<i>GW-1 new</i>	Educate the public on the direct impact to surface water flows from groundwater pumping in unconfined alluvial aquifers such as the Carmel River, and based on the findings of the technical study to develop a water budget (GW-2), increase the public's awareness of how groundwater pumping in upland areas may impact surface flow in creeks and streams.	Impacts from groundwater extraction such as loss of surface flow, riparian vegetation, and aquatic habitat	Conservation, and increased surface flow for aquatic habitat	MPWMD, CRWC	NOAA Fisheries, CDFG, CRSA	\$2K per year	No	Mitigation Program, and Grants	<b>3</b>	
10	<b>GW-2</b>	<i>GW-2</i>	Develop a water budget for the entire watershed so that the full resource system can be better quantified and managed for sustainability of human use and the broader diverse ecosystem. Foremost in this assessment is the analysis of how upland bedrock aquifer withdrawals impact the resources of the lower valley. The water budget should attempt to quantify rainfall, surface flow, evaporation, transpiration, and groundwater. Develop a set of water management recommendations based on the water budget results.	Lack of knowledge regarding water availability, extraction rates or potential impacts to the aquatic and riparian habitats and wildlife	Increased information with the potential for better management	CRWC, CRSA (CRWF)	NOAA Fisheries, CRSA, CRWC, MPWMD	\$500K-1M	Yes	SWRCB, CDFG, NOAA, DWR, American Rivers	<b>1</b>	
11	<b>GW-3</b>	<i>GW-2 new</i>	Quantify the impact of groundwater extraction (multiple wells) in upland areas on summer surface flow in creeks draining from the well field area.	Premature drying of creeks and irregular hydrographs	Increased aquatic habitat and increased spawning success for steelhead	NOAA Fisheries, CRSA, CRWC, MPWMD	CDFG, MCWRA	\$100K	Yes	SWRCB, CDFG, NOAA, DWR, American Rivers	<b>2</b>	

HABITAT ACTIONS (7)												
12	HAB-1	HAB-1	Extend the MPWMD mitigation program of periodic injections of gravels and cobbles downstream of Los Padres and San Clemente Dams to a level that restores the channel bottom to a condition similar to areas upstream of Los Padres Reservoir (LPD).	Lack of spawning gravels	Increased spawning habitat	MPWMD	CRWC	\$50-100K	404,1601, 401	Mitigation Program; NOAA Restoration Center; CDFG;	2	
13	HAB-2	HAB-2	Conduct annual survey of tributaries and conduct annual "Creek Clean-up" to remove urban debris and trash throughout the watershed.	Degraded habitat and water quality, fish passage barriers	Improved habitat, water quality, and passage	CRWC, CRSA	CCC, creek volunteers, CRTF, private landowners, MCPWDept.	\$10K first year	Yes	NOAA Restoration Center; CDFG; American Rivers; Cal-Trout	5	Hitchcock, Robinson Canyon, Potrero, Cachagua, San Clemente creeks.
14	HAB-3	HAB-4	Continue and expand MPWMD and CRWC Large Woody Debris (LWD) program, including further LWD recruitment location studies and installation of Redwood & Douglas fir root balls in those reaches of the river that would most benefit from the introduction of LWD.	Impaired fish rearing habitat; slow flows and increase complexity	Improved habitat	MPWMD	CRWC, CRSA, CDFG	\$10K - study; \$20K/root ball installation	Yes	NOAA Restoration Center; CDFG; American Rivers; Cal-Trout	3	
15	HAB-4	HAB-5	Expand on MPWMD program to create a watershed wide coordinated riparian vegetation restoration program that includes post-project monitoring and maintenance throughout the Carmel River watershed.	Degraded riparian habitat and stream function; streambank instability, erosion	Improved aquatic and riparian habitat	MPWMD	CRWC, BSLT, private landowners	\$10K/year	No	NOAA Restoration Center; CDFG; American Rivers; Cal-Trout, SCC, DWR	1	
16	HAB-5	HAB-7	Based on existing and future habitat typing, identify and implement priority projects to enhance CRLF habitat along the mainstem, and incorporate CRLF habitat benefits within other riparian restoration projects throughout the watershed.	Degraded CRLF habitat	Increased CRLF habitat	CDFG	BSLT, MPWMD, CRWC, public & private landowners	\$50-80K/Yr	Yes	USFW; CDFG; Cal-AM; NOAA	4	
17	HAB-6	HAB-8	Develop a program to provide oversight and encourage land management organizations including park agencies, forest preserves, and golf course owners to strategically place large broken tree limbs from windstorms in the Carmel River for improved habitat. [small scale projects, Ex; willow and cottonwood mattresses, etc]	Impaired fish rearing habitat; slow flows and increase complexity	Improved habitat, reduced costs for disposal of woody material	CRSA, CRWC	MPWMD, CRWC	\$2-10K per year/proj	Varies with project	CDFG, Private land owners	7	
18	HAB-7	HAB-NEW	Initiate program to remove/control aquatic and terrestrial invasives species.	Degradation of habitat quality and competition with native species	Improve habitat for native species; improve potential for restoring native habitat	CRWC, CRSA	BSLT, MPWMD	Varies with project	Varies with project	CDFG, NOAA, SCC, RWQCB, Trout Unlimited, CalTrout, American Rivers	6	

<b>PUBLIC SAFETY (1)</b>												
19	PS-1	PS-2	Reduce the risk of flood damage through combination of multi-objective flood control projects, retrofit of bridges, vegetation management, individual flood proofing, land acquisitions for flood plain restoration, removing structures from the 100 year flood plain with willing partners as feasible, and other beneficial projects.	Degraded habitat, property loss, flood risk	Properly functioning channel; reduced public safety risk; potential reduction in flood insurance costs	MCWRA, FEMA	MCWRA, ACOE, CalTrans, FHWA, County Public Works, CSA50, BSLT, landowners, Carmel River Lagoon Coalition.	Varies with project: \$200K-\$200m	Yes	SCC, DWR, ACOE, FEMA, NOAA, SWRCB, CDFG, CalTrans, FHWA, CSA50, effected property owners	<b>1</b>	
<b>PUBLIC OUTREACH &amp; EDUCATION ACTIONS (3)</b>												
20	PUB-1	PUB-2	Establish a resource conservation and stewardship program for the community and actively disseminate the information to residents and landowners through peer to peer groups and multi-media outreach. Activities should include establishing an outreach campaign to inform the community of the impacts on water flows of excessive turf irrigation and establish a hotline for information and anonymous reporting; and, sending out an annual reminder, that storm drains flow to streams and the ocean and that drains should not be used for illegal disposal.	Negative public opinion; lack of public knowledge and support for conservation efforts	Facilitate understanding and support for residents modifying behavior; potential indirect benefits to water quality and water quantity	MPWMD and CRWC	VWS; CSUMB capstone students, MPRPD, RCD, BSLT, CRWC, CRSA, NOAA, MBNMS, CWC	\$20K/year	No	CCRWQCB, NOAA	<b>1</b>	
21	PUB-2	PUB-4	Implement the Carmel River Parkway Plan between the ocean and San Clemente Dam, as well as similar efforts elsewhere in the watershed for "managed" public access in partnership with watershed stakeholders including local residents, land owners and recreational group representatives.	Trespassing leading to environmental damage to sensitive areas; lack of appropriate access	Improve appropriate public access; reduce impacts of public access	BSLT, MPRPD, CRWC	CRSA, TAMC, County Public Works, DPR, CalTrans	Varies depending on project: \$50K-\$5M	Varies with project	SCC, FHWA, Resources Agency	<b>2</b>	
22	PUB-3	PUB-5	Expand volunteer activities, and maintain the existing network of volunteers in the Carmel River Basin to provide planning, labor, outreach, and mapping services throughout the watershed.	More work than can be done	Get more work done	CRWC	CRSA, MPRPD	\$20K/year to coordinate	No	Foundations, NOAA community based restoration	<b>3</b>	
<b>SEDIMENT ACTIONS (6)</b>												
23	SED-1	SED-1	Based on CRWC's Proper Functioning Condition (PFC) tributary assessments and other watershed assessments, restore and revegetate unstable banks and incised reaches of tributaries and main stem areas including: Conejo Creek, Finch Creek, James Creek & Tularcitos Creek.	Arresting further erosion and additional anthropogenic contribution of sediment into the system	Achieving a sediment budget closer to the natural balance	MPWMD, CRWC, RCDMC	Private Landowners, Resource Conservation District, Permitting Agencies, Interested Nonprofit Organizations	+/- \$25,000 per project	Yes: L/S/F	SWRCB, SCC, NOAA Fisheries, CDFG, EQIP (NRCS)	<b>1</b>	<i>Conejo Creek, Finch Creek, James Creek &amp; Tularcitos Creek.</i>
24	SED-2	SED-3 new	Implement restoration projects in Hitchcock Creek and sub-basin to stabilize stream banks. Conduct a program to inform the residents and property owners on the issues of in-stream home construction, riparian cover removal, and impediments to fish. See CRWC PFC assessment of tributaries.	Arresting further erosion and additional anthropogenic contribution of sediment into the system	Educating watershed residents regarding their impacts to the system and possibly abating further damage. Achieving a sediment budget closer to the natural balance.	CRWC	Private Landowners, Resource Conservation District, MC, Permitting Agencies, Interested Nonprofit Organizations	Varies depending on type of restoration practice needed.	Yes: L/S/F	SWRCB, SCC, NOAA Fisheries, CDFG, EQIP (NRCS)	<b>5</b>	

25	SED-3	SED-5	Identify and map existing sediment basins to evaluate their effectiveness in order to determine the appropriate locations for installation or removal (restoration).	Removal of inappropriate sediment basins in flowing creeks	Reduction in disturbance to stream bed and banks	CRWC and CRSA	MPWMD, NRCS,	\$10K	None	SWRCB, EQIP	6	
26	SED-4	SED-6	Implement BMPs for erosion prevention to reduce sediment deposition throughout the watershed including the main tributaries and the main stem of the Carmel River. Potential projects include, but are not limited to, excluding cattle from riparian areas and streambeds .	Excessive erosion	Higher water quality and better spawning habitat; identification of rural land use practices that accelerate sedimentation	RCDMC, BSLT, MPWMD, MC	CRWC and CRSA, NRCS, Private Landowners, Interested Nonprofit Organizations, CCC, MCPW	\$20K per year	Yes: L/S/F	SWRCB, SCC, NOAA Fisheries, CDFG, EQIP (NRCS)	3	
27	SED-5	SED-7	In cooperation with the County Public Works Department (PWD) replace culverts on Carmel Valley Road as appropriate to minimize erosion and restore natural stream function.	Fish passage and erosion caused by failing culverts	Better fish passage and reduced erosion from failing culverts	MCWRA, CRWC	Pacific Watershed Associates	\$10-100K per culvert	Yes: L/S/F	SWRCB, SCC, NOAA Fisheries, CDFG	4	
28	SED-6	SED-8	Conduct assessment of rural and unpaved roads throughout the watershed to identify and prioritize road treatments and roads for decommissioning; implement priority recommendations.	Sediment delivery to streams; road maintenance issues	Reduced sediment delivery to stream, reduced need for road management, decreased costs for rural road maintenance	RCDMC, MC; Road Assns	Pacific Watershed Associates, CalGeoSurvey, County, Private & public land owners and road assns.	\$100K/yr	Varies with project	SWRCB, SCC, NOAA Fisheries, CDFG	2	
<b>STEELHEAD ACTIONS (9)</b>												
29	SH-1	SH-1	Expand the current fisheries assessment and monitoring program to include tributaries and multiple mainstem locations to quantify steelhead habitat utilization and migration patterns throughout the Carmel River Watershed.	Knowledge gap for numbers of salmonid fish using system	Acquiring the information required to determine implementation projects to provide full access for adult migrants to occupy all potential spawning habitats upstream	MPWMD, CRWC, CDFG, NOAA Fisheries	Cal-Am	\$1.25M over five years	CDFG, NOAA Fisheries	NOAA Restoration Center; CDFG; American Rivers; Cal-Trout; MPWMD, CalAm	3	
30	SH-2	SH-5	As a component of SH-1, Install a weir trap between Mallorca bridge and the Highway One bridge to count immigrating adults. The weir can be designed to collapse when flow reaches flood levels. Additionally, use of “fyke” nets can allow kelts & smolts moving downstream to be collected.	Unknown population dynamics for entire watershed	Known population dynamics for entire watershed; better management of steelhead resource and sport fishery; opportunity to delist	MPWMD, CRSA, CRWC	CDFG, NOAA Fisheries, USFWS, Private Property Owners	\$75K capital cost and \$65K operating cost per year	CDFG, NOAA Fisheries, USFWS	NOAA Restoration Center; CDFG; American Rivers; Cal-Trout; MPWMD, CalAm	8	
31	SH-3	SH-2	Establish a Rescue Fund for the implementation of annual watershed restoration and steelhead rescue projects.	Insufficient labor to conduct complete and timely rescues of juvenile steelhead in drying tributaries and install habitat components	Maintain volunteer base and technical expertise to improve the survival of stranded fish	CRSA, CRWC, & BSLT	MPWMD & Cal Conservation Corps	\$20K/yr	CDFG, NOAA Fisheries, COE, RWQCB, USFWS	NOAA Restoration Center; American Rivers; Cal-Trout; MPWMD, MPRPD, MCo, Private Land Owners	4	

32	SH-4	SH-3	Conduct a watershed-wide assessment and map culverts & fish barriers including an estimate of the replacement cost of non functioning units. Incorporate the problems identified in the CRWC PFC findings for the main tributaries.	Partial or complete migration barriers include: Syndicate Camp fords; critical riffle above Pine Creek; concrete crossings	Full access for adult migrants to occupy all potential spawning habitats	Monterey County, MPWMD	CDFG, NOAA Fisheries, Private Land Owners	\$350K to produce a comprehensive watershed assessment	Landowner access agreements	NOAA Restoration Center; SCC, CDFG; American Rivers; Cal-Trout; MPWMD, MCo, Private Land Owners	1	
33	SH-5	HAB-2	Remove or modify priority fish passage barriers throughout the watershed.	Impaired access to usable habitat	Improved passage to usable habitat, increased spawning and rearing success	CRWC, CRSA	CCCORPS, CRSA, CRWC, CDFG, NOAA, MPWMD, MPRPD, MCo, CalTrans, Private Land Owners	\$100K first year	Yes	NOAA Restoration Center; SCC, CDFG; American Rivers; Cal-Trout; MPWMD, MPRPD, MCo, Private Land Owners	2	Hitchcock, Robinson Canyon, Potrero, Cachagua, San Clemente creeks.
34	SH-6	SH-4	Redesign and install the fish screen at the entry to the outlet at LPD.	Loss of emigrating juvenile and smolts from habitat areas upstream of Los Padres Reservoir	Survival of entrained downstream migrants	Cal-Am	Cal-Am, MPWMD, ; NOAA/NMFS, CDFG;	\$500K	CDFG, NOAA Fisheries, USFWS	CalAM	5	
35	SH-7	SH-6	Establish a partnership with other agencies to sort, store, and discharge a portion of the coarse-grained sediment (spawning gravels) stored in San Clemente and Los Padres Reservoirs to the lower Carmel River based on prior studies.	Inadequate gravel supply for spawning adults, juvenile steelhead and aquatic insects	This will Increase juvenile steelhead production; increased abundance and diversity of aquatic insects; benefit critical steelhead spawning habitat areas, increase the diversity and abundance of aquatic benthic macro invertebrates, and add physical complexity to the riparian areas downstream of the existing San Clemente and Los Padres Dams	MPWMD, Cal-Am	Cal-Am	\$60K per year/reservoir	CDFG, NOAA Fisheries, COE, RWQCB, USFWS	CalAM, MPWMD, Cal-Trout, NOAA	6	
36	SH-8	SH-7	Concentrate the flow at the Los Padres Dam spillway for out-migration of steelhead.	Fish trapped in reservoir	Increased fish passage for emigration (out-migration)	Cal-Am	CDFG, NOAA Fisheries, COE, RWQCB, USFWS	North : \$50K; Dam: +/- \$200K	CDFG, NOAA Fisheries, COE, RWQCB, USFWS	CalAM, MPWMD, Cal-Trout, NOAA, CDFG	7	
37	SH-9	FLAWS-7	Monitor the Carmel River & tributaries for fish barriers twice annually (during the in-migration and out-migration) to insure that no barriers to fish passage go unnoticed. Mitigate as appropriate.	Fish passage, access to habitat	Increased spawning habitat	CRWC	SA; MPWMD; CalAM; volunteers	\$15K/yr	No	MPWMD	9	

**NEW CATEGORY:**

**MONITORING ACTIONS (4)**

38	MON-1	CC-14	Develop an adaptive management program for water quality in the lagoon, including installing an automated water quality monitoring station in the lagoon; coordinating with Carmel Area Wastewater District (CAWD) for discharge of tertiary water into the lagoon; and investigating use of California Department of Parks and Recreation wells for emergency discharges to lagoon.	Poor water quality; lack of inflow	Improved water quality and quantity	CRSA/MPWMD/DPR	CAWD	\$20K/year	Yes	SWRCB, CalAM, CAWD, MPWMD	1
39	MON-2	HAB-10	Expand habitat and species monitoring programs including: 1) aquatic and terrestrial non-native invasive species; 2) BMI index; 3) riparian habitat; 4) instream habitat; and, 5) restoration projects.	Habitat quality and sustainability; presence of invasive species	Evaluate the relationship between the BMI index and steelhead; identify and prioritize invasive species for management/removal measures; identify and prioritize restoration needs and locations; evaluate success of restoration efforts	MPWMD	CRWC, CRSA, BSLT, VWS, CSUMB	\$50K - \$150K/year	Depends on location and species	DFG, NOAA, RWQCB, Trout Unlimited, CalTrout, American Rivers	2
40	MON-3	PUB-1	Establish a Volunteer Water Quality Monitoring Program incorporating local schools, Snapshot & First Flush program participants, and other interested stakeholders to tie into the MPWMD program and to include all the main tributaries.	Inconsistency in water quality monitoring effort	Early detection of water quality problems with increased response time; ability to focus implementation projects where the greatest need exists; promote stewardship values	MPWMD	Carmel Unified School District, Boys and girls clubs, NOAA, USGS, CWC	\$20K/year	No	CCRWQCB, SWRCB	4
41	MON-4	SED-4	Establish a sediment transport monitoring program in concert with the surface flow monitoring program of MPWMD for the main stem and tributaries. Thus, providing decision makers with the key to quantify the problems and assessing future changes. See Physical & Hydrologic Assessment WI 2004-05/2, p 76 # 8.2.	Lack of information about sediment transport throughout the watershed	Increased information leading to better sediment management	CRTF	CSUMB, MPWMD, CalAM, USGS	\$50K-100K/year	No	SWRCB, NOAA, CalAM	3

*How to  
protect  
& enhance  
the Carmel River  
and your property*



**Monterey Peninsula  
Water Management District**

# WHY DOES PROPERTY ERODE & FLOOD?

*As a river-front resident, you live in the middle of a riparian ecosystem, amidst the very forces that form our natural landscape.*

## Carmel River Timeline

Human alterations have severely degraded the Carmel River riparian corridor, causing increased erosion and flooding over the last 80 years. Problems along the river are the cumulative result of many changes along the river and throughout the watershed.

### 1921 San Clemente Dam constructed

The dam traps the sediment that naturally would travel down the river to settle out in the Valley, where it is crucial in building river banks and nourishing streamside vegetation. By year 2001, this trapped sediment had reduced the San Clemente Reservoir's original storage capacity of 1,425 acre-feet by 90 percent.

### 1948 Los Padres Dam constructed

Currently, over one-third of the 3,030 acre-foot Los Padres Reservoir is filled with trapped sediment.

### 1959 Large-scale municipal pumping of aquifer begins

Decades of pumping from the Carmel Valley aquifer have reduced the water supply to native trees and vegetation. Lowering of ground water levels causes the river to run dry, especially during rainless summer and fall months. This weakens and kills plant roots which stabilize banks.

### 1960 Intensive development of floodplain begins

The lack of large magnitude floods, such as those experienced in 1862, 1911 and 1914, encouraged building in flood-prone areas. The river was confined to a progressively narrower channel, increasing the likelihood of severe localized erosion.

### 1976/77 Severe drought prompts overpumping, which increases die-off of streamside vegetation

Groundwater was pumped to a new low to satisfy community water demands. The level remained below the root zone for long periods of time, stressing trees and plants that held banks together.

### 1978/1986 Wet winters increased stream flow, which washed away unvegetated property

Even though flows were moderate, erosion was severe on degraded banks. An estimated 100 acres of land eroded during this eight-year period alone.

### 1983 Carmel River Management Plan adopted

Monterey Peninsula Water Management District adopted a plan to protect and restore the Carmel River and its riparian corridor. Numerous projects have prevented property loss, reduced flood hazards, protected streambanks and restored the river.

### 1995/1998 Significantly high river flows cause property damage and erosion

High river flows in January 1995 (9,800 cubic feet per second) and March 1995 (16,000 cubic feet per second) eroded unprotected banks and flooded hundreds of structures. Although larger floods have occurred, the building of homes in flood-prone areas turned this natural phenomenon into a catastrophe.

Three years later, some areas along the Carmel River flooded again in February 1998 with a peak flow of 12,000 cubic feet per second. Many steep banks along the river failed and erosion in the watershed was widespread.

ocean. But as people developed the floodplain, they began confining the river into a narrower and narrower channel. Today, due to dams, levees, roads, bridges, homes and other barriers, the Carmel River is a single, deeply-incised channel. This narrowing has intensified the velocity of water flow against riverbanks and increased the potential for erosion.

This problem is compounded when property owners cut native, streamside vegetation, or when too much groundwater is pumped, leaving plants to wither and die. Without the extensive, intertwining root systems of riparian trees and plants, there is nothing to stabilize the riverbank and hold the sandy soil together.

High velocity river flow against these denuded riverbanks has the same effect as a fire hose pointed at a pile of dry sand. Even though the Carmel River is usually peaceful and scenic, erosion can be dramatic when the increased flow of the confined river moves against unprotected banks.

The key to minimizing the effects of erosion and flooding lies in understanding river dynamics. Nobody has ever won a fight with a major force of nature, but by working together *with* the river and not against it, you can achieve a degree of control and peace of mind. Read on . . .

## River Myth #1: fact & fiction

**Confining the river effectively would make flooding obsolete.**

Levees, dams and other confinements cannot always prevent flooding. At best, these alterations can only make floods less frequent. Levees often increase local flooding when they fail. A floodplain is bound to get wet at some point—it's a matter of time.

## Riparian ecosystem:

*The natural associations of soil, plants and animals existing within the floodplain of a stream, and dependent for their survival on high water tables and river flow.*

*“The first and most important aspect of a natural channel is that it is self-formed and self-maintained. The flowing water carves the groove in which it flows. The water fashions the depth, the cross-section, the areal configuration and longitudinal profile.”*

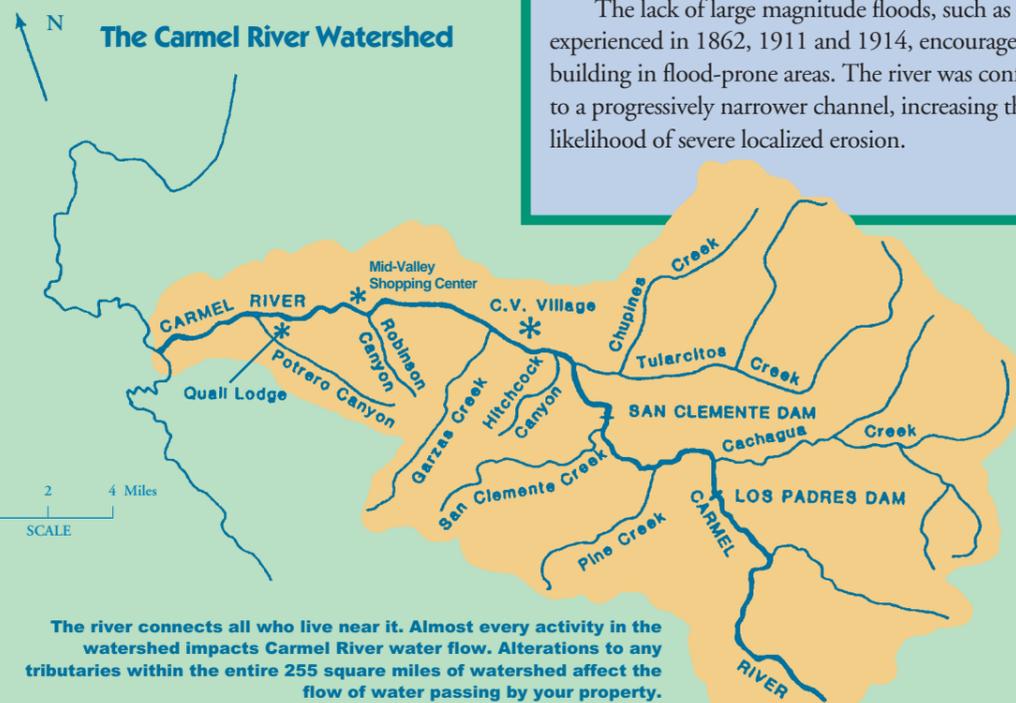
—Luna B. Leopold  
Professor of Hydrology,  
University of California,  
Berkeley

Rivers are ever-changing entities. Whether in a sudden rush of water during a few days or a persistent slow flow over decades, water has always been the dominant architect of the earth's surface. Periodic bank overflow is the pulse of the river, as natural and inevitable as the drifting of sand dunes, the ebb and flow of the tides or the cycles of the moon.

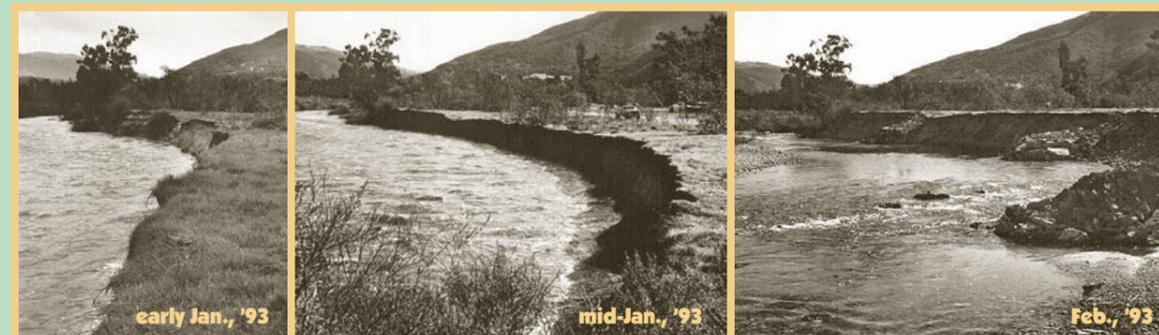
As a healthy river carves and reshapes the landscape, it acts as a corridor of life, laying down rich sediments and supporting a wide variety of plants and animals. A high river flow is only called a “flood” or “disaster” when people and property are in its path.

Before human settlement, the Carmel River was a wide, shallow stream with meandering threads which separated and joined on their way to the

*continued, far right column*



The river connects all who live near it. Almost every activity in the watershed impacts Carmel River water flow. Alterations to any tributaries within the entire 255 square miles of watershed affect the flow of water passing by your property.



These successive photos of the same riverbank in mid-Carmel Valley show how even moderate flows can severely erode banks that are unprotected by native vegetation.

## Steinbeck on the Carmel River:

*“The Carmel is a lovely little river . . . in its course it has everything a river should have. It rises in the mountains, and...spills into pools where trout live...In the winter it becomes a torrent, a mean little fierce river, and in the summer it is a place for children to wade in and for fishermen to wander in. Deer and foxes come to drink from it...and now and then a mountain lion crouched flat laps its waters...it's everything a river should be.”*

—John Steinbeck, from “Cannery Row,” 1945



# PROTECT THE RIVER & YOU PROTECT YOURSELF

*The same factors that erode banks, worsen flooding and destroy property also hurt the river, habitat and wildlife.*

*Keeping the river healthy protects your home and property.*

**Which of these is part of the earth's hydrological system which supports all life on the planet?**

- A) The Rio Grande River
- B) The "Mighty Mississippi"
- C) The Carmel River
- D) All of the above

**Answer: "D," of course. The Carmel River is part of an intricate hydrological system that each year removes 80,000 cubic miles of water from the world's oceans and recycles it over the face of the earth.**

**Rivers are the "arteries" of the planet; they sustain our most important food chains as they distribute nutrients, carry off waste and create habitat.**

**Yet it's easy to forget that the "overgrown creek" behind the shopping center is as vital to the health of our planet as a tropical rain forest or the ozone layer.**

**Of the 121 million acres of U.S. land within the 100-year floodplains of rivers, only 19 percent are in their natural or semi-natural conditions today.**

if you'd like to create a viewing "window" or need to alter vegetation for special reasons—they can help you minimize any negative impacts.

**Irrigate native streamside vegetation when needed**

In a typical year, groundwater pumping drops the water-table in the Carmel Valley aquifer from between 10 to 50 feet. That's why streamside plants may need irrigation to survive, especially in summer and fall. For example, heavy municipal pumping during drought years would kill much of the protective corridor of trees between the Carmel River Lagoon and Robinson Canyon Bridge, but it is kept alive by the MPWMD irrigation program.

**Keep non-native plants out of the riparian corridor**

Species not native to the riparian community such as ivy, broom, acacia, eucalyptus and pine trees, compete with native plants and do not prevent erosion. The riparian corridor is a natural area—not a garden—and should be left undisturbed. Call MPWMD for advice on removing non-natives or replanting native riparian vegetation.

**Keep vehicles out of the riverbed**

Vehicle use near the riverbed is illegal without special permits from the California Department of Fish and Game and MPWMD. Even a horse trail can cause severe erosion if it's too close to the river.

**Do not dump tires, concrete, asphalt or any foreign material in or near the river**

Altering the streambank in this manner does not provide lasting protection against erosion, but it can cause erosion on your neighbor's property by altering the flow downstream. Besides being unsightly, rubble often contains toxic materials.

**Never allow poisons to enter the river or floodplain**

Herbicides, bug sprays, common yard chemicals, oil products, detergents, wash water, pool or spa water—all are poisons that kill plants and animals. Even "biodegradable" soaps can be harmful to wildlife, as well as fertilizers which cause algae blooms and deplete oxygen. If you live in the floodplain, using poisons in your yard is the same as dumping them in the river—that is where they will end up. Be sure containers are well-sealed and can't be carried off in the event of flood.

**Do not construct cobble (rock) dams or diversions**

These illegal obstructions in the river inhibit steelhead migration, reduce habitat value, raise water temperatures, alter flows and can cause erosion.

**River water should remain in the river**

Water diversions are strictly controlled by the State Water Resources Control Board. Unauthorized diverting or siphoning of water for personal use reduces water levels and can stress vegetation that

protects your banks and those of your neighbors. Less water means less aquatic habitat.

**Work with your neighbors**

Vegetation is most effective in preventing erosion when it occurs continuously along the banks. Whether you consider the river an amenity or a problem, neighbors must work together to minimize property loss. Participate in MPWMD river restoration projects in your area, or contact us to help plan a neighborhood restoration.

**Become a "river watcher"**

When streamside landowners act irresponsibly, it is their neighbors who end up paying the most. That's why all the destructive practices described here are either illegal or require a permit—to protect you, your neighbors and the river. Help keep the river healthy by educating your neighbors and alerting MPWMD to hazardous conditions, degraded areas, and damage to irrigation equipment or other property.

**River Myth #3: fact & fiction**

**"Straightening the river would prevent floods and erosion."**

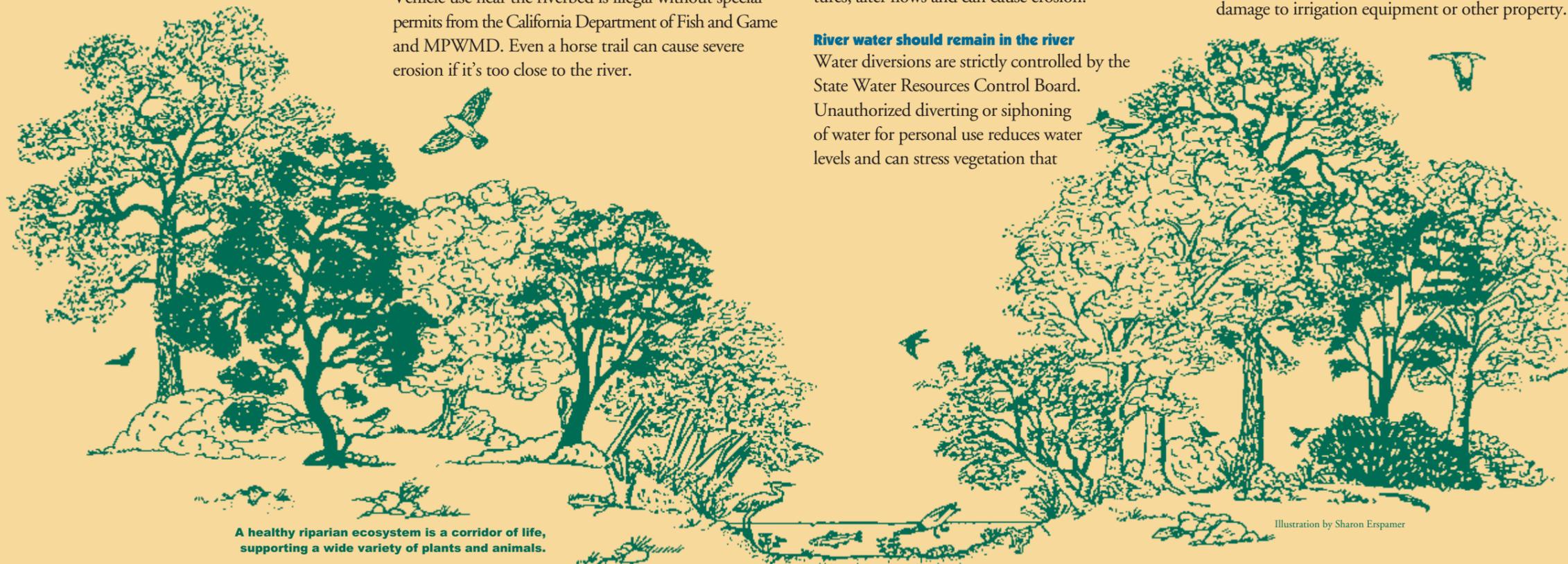
Even if it were possible to engineer the "straightening" of the river, a straighter channel alignment would increase water velocity and erosion, while destroying habitat. To avoid increased velocity, the channel would have to be so wide it would engulf many nearby homes and properties.

**Why save the river?**

**Saving threatened species**  
Steelhead fish and the California red-legged frog live within the watershed and have been listed as threatened under the Federal Endangered Species Act. Vegetation removal, streambank alteration and other activities around the Carmel River are regulated by federal law.

**Natural looking streams increase property value**  
A recent analysis of property values of homes located on natural and channelized branches of the Portage River in Wood County, Ohio, indicates that "homes constructed on the natural stream [above the flood plain] are assessed to be worth 331% more than homes built on the channelized stream."

—K. Schurr, R. Schurr, and P. Barker. "How a Natural River Can Increase the Community's Tax Base," *American Rivers* 14, no. 2 (1986): 4.



A healthy riparian ecosystem is a corridor of life, supporting a wide variety of plants and animals.

Illustration by Sharon Erspamer





# HOW TO SAFEGUARD YOUR HOME & PROPERTY



**W**hen you plant and maintain native riparian vegetation, you help to minimize erosion and maximize the likelihood that your property will remain intact during a flood.

While property loss during the 1995 and 1998 flooding was sudden and dramatic, it's important to know that if your banks are unprotected, you are losing your land to erosion every day, even during relatively low flows.

It's easy to conclude that high river flow causes erosion, but the true causes are usually lack of protective bank vegetation or instability upstream.

Banks with healthy native vegetation often remain unchanged even when deeply flooded. Our native streamside plants, especially willow trees, are your first line of defense against property loss. The branching roots and fibers that make up riparian root systems hold soil together at streamside and extend far back from the banks to provide natural protection. During floods, the leaves and branches of plants slow the velocity of stream flow and reduce the erosive force of the river against the banks.

Quick-growing native trees provide an amazingly high level of protection even as young saplings. Planting is also the cheapest, quickest way to protect yourself—it requires no permits, and free cuttings and planting guides are available from the Monterey Peninsula Water Management District. Streamside vegetation also provides wildlife habitat and deep, shady pools for fish, while at the same time enhancing views and property values.

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This photo shows a willow sapling and the curve of the unprotected, eroded bank upstream from the tree. Even though the willow is only a couple of years old, it has already saved a large area of bank from erosion.

Neighbors must cooperate to create a continuum of bank protection. This bank restoration project shows newly planted willow cuttings taking root. With irrigation during dry periods, these fast-growing native trees will provide a high level of bank protection in just a few years, while at the same time increasing aesthetics, wildlife habitat, water quality and property value.



Stabilization will only prevent erosion if the correct technique is chosen, and then properly installed. Whatever stabilization technique you use, it should always be installed along with native trees. Vegetation covers rock rip rap and other structures quickly to increase bank protection and provide the aesthetics, improved water quality and wildlife habitat that exposed rock cannot contribute.

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Photo credits: cover photo, MPWMD staff; pages 2-3—wildlife photos, Anne Muraski; river photos, MPWMD staff; pages 4-5—river and wildlife photos, Anne Muraski; page 6-7—steelhead photo, MPWMD staff; frog, courtesy U.S. Fish and Wildlife Service; page 8—owl, Anne Muraski; river cleanup photo, MPWMD staff

## River Myth #2: fact & fiction

### Streamside vegetation "chokes the channel" and increases flooding.

The benefits of streamside plants far outweigh the insignificant flood elevations they may cause. The river will flood whether vegetation is present or not, but banks with healthy growth are much more likely to remain intact and resist erosion during a flood. Plants also help absorb rainfall and runoff.

## A word of caution about rock rip rap

Severely eroded, extremely unstable banks may warrant using large rock or other acceptable material along with vegetation—a technique which requires permits and heavy equipment. Merely dumping rip rap over the bank will usually create more erosion problems instead of solving them.

To be effective, a bank stabilization project must be carefully designed and built. Results can vary greatly depending on rip rap size, type and placement; bank preparation; degree of stabilization; use of filtering materials; conditions up and downstream, etc.

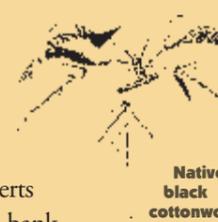
Improperly installed, rip rap can do more harm than good. And even if your project is sound there are no guarantees.

Any bank can be compromised if sufficient erosion occurs upstream to alter the natural flow of the river. If your neighbors' streambanks fail, stream flows can erode your banks and eventually undermine your rip rap from beneath or behind.

To save time and expense, call [the experts at] MPWMD for advice before you invest. A bank stabilization technique other than rip rap may be more cost-effective for your unique situation.



Native red willow



Native black cottonwood

### Benefits of native streamside vegetation:

- Protects property
- Relatively inexpensive
- Easy to install
- Requires no permits
- Prevents erosion
- Stabilizes banks and slopes
- Reduces stream flow velocity
- Provides habitat for wildlife
- Enhances property values
- Improves aesthetics
- Supplies nutrients
- Improves water quality
- Shades and cools water
- Provides fish habitat

## Flood Checklist: preparing your home

- Store valuables on high shelves.
- Create a list of the most important portable items you'll want to take with you in case of evacuation (photos, keepsakes, documents, keys, home inventory, medicines, jewelry etc.). Store them near each other for easy collection.
- Keep a home inventory at another location.
- Elevate or secure large equipment such as washing machines, water heaters, furnaces, television, etc.
- Evaluate each room to see how quickly you could move belongings out of harm's way. You may want to add high shelving, store collections in one moveable box, or install casters on hard-to-move furniture.
- Inspect your home for ease of cleanup. Use area rugs over tile or linoleum instead of wall-to-wall carpeting. Smooth wall surfaces are easier to clean and disinfect than textured ones.
- Have a family evacuation plan: where to meet, quickest escape routes, etc.
- Keep carriers, leashes and food for your pets in a handy location.
- Maintain an emergency kit: flashlight, radios, fire extinguisher, drinking water, food supply, first aid kit, tools, all-weather gear.
- Consider installing gates in fences so flow and debris can pass through during flooding.
- Keep important items on hand:
  - First aid and survival guide
  - Instructions on how to turn off utilities
  - Emergency phone numbers
  - Emergency broadcast frequencies
  - Sandbags (available at fire stations)

## The river joins all who live along it: how the cycle of erosion works

Whenever you alter the riverbank, you set forces in motion that also alter your neighbor's banks—for better or worse.

Improperly stabilizing your bank or deflecting flows away from your property even slightly can change river hydraulics and increase flow velocity and erosion downstream.

When the river deposits eroded material in gravel bars downstream these obstructions deflect water flow into your neighbor's banks, causing more erosion and gravel bars as the cycle continually works its way downstream.

Contact MPWMD before altering your streambank to make sure you're not transferring your problem to someone else.



**MPWMD  
Carmel River  
restoration work  
1983-2001**

Seven miles of river bank replanted with vegetation

53,112 willow and cottonwood cuttings planted along river banks

611,880 feet of irrigation systems installed to establish plantings and maintain vegetation

More than 135,000 cubic yards of river material moved to create stable channels

31 fish pools excavated to provide steelhead habitat

114,295 steelhead rescued

1,050 tires removed and recycled

855 cubic yards of trash removed

### **River Myth #4: fact & fiction**

#### **Clearing the riverbed would prevent floods.**

It is impossible to "vacuum" the riverbed of all obstructions. Removing all organic debris would remove nutrient sources, destroy aquatic habitat, and could actually cause erosion by altering stream flow. Each year, MPWMD removes non-organic material from the river, such as car tires, metal and plastic debris.

Contact the Monterey Peninsula Water Management District before making streambank alterations to ensure that you are taking the most effective action to protect yourself, your neighbors and the river—we're here to help!

## **Services for river-front residents**

Here are just some of the services that MPWMD staff biologists, hydrologists, engineers and maintenance workers provide to landowners near the Carmel River:

- Analyze the condition of your riverbank and that of your neighbors'.
- Evaluate your property's flooding and erosion potential, and suggest preventive measures.
- Use historic photographs and flood elevation models to predict future problems.
- Provide information on safely pruning vegetation to create view windows.
- Design neighborhood river restoration projects.

- Help you obtain permits from different agencies.
- Advise you on the addition of riparian plants and irrigation systems.
- Supply free willow and cottonwood cuttings.
- Advise you on how to safely remove non-native vegetation.



Each year, MPWMD clears the river bottom of debris that can cause erosion and degrade riverbank and water quality.

- Provide "how-to" guides on streambank planting and water-wise landscaping.
- Help you find information in our library of public documents and reports pertaining to the river.
- Remove flood debris and other flow obstructions.
- Maintain the "Erosion Potential Hotline" with updates on streamflow: 658-5678.

For assistance, please call the Carmel Valley Field Office at 659-2543.



### **Monterey Peninsula Water Management District**

Main Office: 658-5600

5 Harris Court, Bldg. G, Monterey, CA 93940

For river-related questions call  
Carmel Valley Field Office: 659-2543  
Talbot Building, Carmel Valley Village

For updates on streamflow conditions call  
Erosion Potential Hotline: 658-5678

For flood or erosion emergencies call  
Monterey County Office  
of Emergency Services: 755-5010

Visit the District website at  
[www.mpwmd.dst.ca.us](http://www.mpwmd.dst.ca.us)

<b>REGULATION XII</b>	<b>CARMEL RIVER MANAGEMENT</b>
RULE 120	<a href="#"><u>CARMEL RIVER ADVISORY COMMITTEE</u></a>
A.	COMMITTEE PURPOSE
B.	COMMITTEE ORGANIZATION
RULE 121	<a href="#"><u>CARMEL RIVER MANAGEMENT FUNDS</u></a>
RULE 122	<a href="#"><u>RIVER MANAGEMENT FUND ACCOUNTING</u></a>
RULE 123	<a href="#"><u>RIVER MANAGEMENT ACTIVITIES</u></a>
A.	EROSION PROTECTION AND PREVENTION
B.	MAINTENANCE OF VEGETATION
C.	INSPECTION
D.	EDUCATION
E.	RESEARCH
F.	EASEMENTS AND AGREEMENTS
G.	EMERGENCY
H.	OTHER RELATED ACTIVITIES
RULE 124	<a href="#"><u>RIVER MANAGEMENT AND REGULATIONS</u></a>
RULE 125	<a href="#"><u>RIVER ACCESS PERMITS</u></a>
RULE 126	<a href="#"><u>RIVER WORK PERMITS</u></a>
A.	REGULAR PROCEDURE
B.	PERMIT EXEMPTIONS
C.	EMERGENCY PROCEDURE
D.	PROCEDURE WHERE A LIFE OR PROPERTY IS THREATENED
RULE 127	<a href="#"><u>PERMIT PROCESS</u></a>
A.	A.RIVER WORK PERMITS
B.	B.EMERGENCY RIVER WORK PERMITS
C.	C.PERMIT APPEALS
RULE 128	<a href="#"><u>LIMITATIONS</u></a>
RULE 129	<a href="#"><u>EFFECTIVE DATES</u></a>
RULE 130	<a href="#"><u>SUNSET PROVISIONS</u></a>

## **RULE 120 - CARMEL RIVER ADVISORY COMMITTEE**

### **A. COMMITTEE PURPOSE**

The Carmel River Advisory Committee is a standing committee of the District. The committee shall advise the Board of Directors with regard to management of the Carmel River, and its riparian corridor and to any matter referred to this committee.

### **B. COMMITTEE ORGANIZATION**

1. The Carmel River Advisory Committee shall be comprised of seven (7) members. Each Director of the District shall appoint one member to this advisory committee. Appointed committee members shall serve a term of two (2) years, which term shall expire on June 30, or on the date the appointing Director vacates office as a member of the MPWMD Board of Directors, whichever shall first occur. A vacancy shall be created by resignation or in the event a committee member fails to attend three (3) consecutive regular meetings without good cause as determined by the Board of Directors. Nomination to fill any vacancy or to reappoint any committee member shall be made by the Director's seat which exercised the original appointment to that position.
2. All meetings of the committee shall comply with the Ralph M. Brown Act. At the first meeting held in each fiscal year, the committee shall elect a chairperson and vice-chairperson to preside at committee meetings. The committee may adopt rules governing the conduct of its meetings.
3. Committee members shall be required to reside within the boundaries of the Monterey Peninsula Water Management District and shall be knowledgeable about issues relating to the Carmel River. Carmel Valley residents shall be given priority in the selection of committee members. Any committee members currently sitting in a position on the committee shall be allowed to complete their term of duty, regardless of their place of residence.

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 22 (3/11/85); Ordinance No. 69 (6/21/93); Ordinance No. 116 (7/19/2004)*

## **RULE 121 - CARMEL RIVER MANAGEMENT FUNDS**

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 12 (4/9/84); renumbered as part of Rule 64 by Ordinance No. 12 (4/9/84); Ordinance No. 22 (3/11/85); deleted by Ordinance No. 69 (6/21/93)*

**RULE 122 - RIVER MANAGEMENT FUND ACCOUNTING**

*Rule added by Ordinance No. 10 (7/26/83); deleted by Ordinance No. 69 (6/21/93)*

## **RULE 123 - RIVER MANAGEMENT ACTIVITIES**

The following activities fall within the purview of the Carmel River Management Plan and may be undertaken by the District as discretionary acts to the extent that funds are reasonably available.

### **A. EROSION PROTECTION AND PREVENTION**

#### **1. Formulation of Standards**

Develop technical standards and a structural master plan to guide all riverbank and channel modification projects. Guidelines may (a) set the optimum channel width and bank steepness to depth relationships, (b) address coordination requirements among nearby property owners, (c) evaluate the cost and effectiveness of alternative bank stabilization solutions, (d) establish preferred solutions, (e) define acceptable circumstances and processes for sediment removal, (f) set general engineering requirements for material and design, (g) establish requirements for covering, replanting and maintaining works once completed. Standards shall be reviewed to reflect experience gained during implementation of the program, and (h) establish aesthetic requirements for erosion works.

#### **2. Annual Review**

Review aerial photos taken each spring; walk the entire alluvial reach of the river from Camp Steffani to the Carmel River lagoon. Review areas that may be subject to erosion during the next storm season.

#### **3. Removal of Hazardous Trees**

Identify trees that appear to be diseased or likely to fall into the river. Attempt to effect removal or replacement of such trees where their removal does not conflict with the shade or wildlife requirements.

#### **4. Snag Removal**

Remove snags and debris from the channel, or secure with cables where appropriate.

#### **5. Technical Assistance**

Provide technical assistance through staff as follows:

##### **a. Permits**

Coordinate issuance of river work permits with the requirements of the County of Monterey, the California Department of Fish and Game, and the U.S. Army Corps of Engineers.

b. Design of Works

Provide design, engineering and construction supervision upon request to landowners proposing riverbank or channel protection projects.

c. Landowners

Assist landowners to acquire rights-of-way and assist groups of landowners to select projects by providing information on standards and costs.

d. Government

Monitor the availability of outside funding and review proposed legislation affecting the program or the interests of the Carmel River.

e. Funding

Participate in specific river works projects as feasible and desired by the Board. Financial participation may be partial or full at the discretion of the Board.

6. Project Sponsor

Administer grant funds, donations, and District projects with multiple property owner participation.

7. Construction

Construct riverbank and channel works.

8. Maintenance of Works

Operate and maintain District projects and works related to riverbank and riverbed erosion along the Carmel River.

**B. MAINTENANCE OF VEGETATION**

1. Monitoring

Review annual aerial photos and inspections of the riparian corridor to determine changes in the health of the riparian vegetation. Maintain a file of photos and maps showing changes in the riparian corridor.

2. Planting and Revegetation

Replant areas as needed and prioritize areas for planting. Costs of planting may be borne fully or partially by the District.

3. Technical Assistance

Provide technical assistance through staff as follows:

a. Permits

Assist individuals seeking permits to revegetate and change the vegetation type along the riparian corridor.

b. Design

Provide design, engineering, and construction support upon request to landowners proposing irrigation systems for watering riparian vegetation in the corridor.

4. Construction of Irrigation Systems

Design District irrigation system standards and specifications, and identify reaches where such irrigation is necessary to the health of the riparian corridor. Prioritize areas for irrigation. Irrigation development and construction costs may be borne fully or partially by the District at the discretion of the Board.

5. Operations and Maintenance

Monitor and maintain District irrigation systems. Operation should integrate monitoring of plant health.

5. Channel Clearing

Monitor reaches where vegetation has become established in the low flow channel or on gravel bars. Maintain adequate channel capacity to reduce or prevent damage to property and riparian habitat due to storm flows with a magnitude that is less than or equal to the once in ten (10) year runoff event.

**C. INSPECTION**

1. Erosion Protection Works

Inspect bank work and channel modification projects to obtain compliance with standards and permit conditions.

2. Vegetation Removal

Monitor activities along the river to prevent unauthorized grading and works.

## **D. EDUCATION**

### 1. Erosion Works and Prevention

Educate landowners and the general public regarding river management and erosion prevention. Initiate forums with landowners to provide information on the cost, effectiveness and liabilities of bank modification.

### 2. Vegetation

Assist property owners to encourage planting of desirable species and to discourage removal of vegetation. Provide information on desirable species, spacing and maintenance.

### 3. Grading

Develop and distribute information on grading.

### 4. Regulation

Develop and distribute standards and conditions to be met in river work permits and emergency river work permits pursuant to Rule 127. Distribute information as to those activities which may be undertaken without a river work permit, and activities which are defined as “minor works” pursuant to Rule 127.

## **E. RESEARCH**

Research stream geomorphology, erosion potential, fishery and vegetation to understand the system dynamics and to maintain appropriate standards.

## **F. EASEMENTS AND AGREEMENTS**

Accept and acquire easements or agreements needed to provide right-of-way for irrigation systems and access to undertake works, and accept other property interests deeded to the District.

## **G. EMERGENCY**

Provide emergency response to remove snags and to minimize damage where the river is causing erosion or threatening to erode.

## **H. OTHER RELATED ACTIVITIES**

Manage the riparian corridor, examine sedimentation from non-riparian drainage areas and evaluate culvert design at tributary junctions in conjunction with the Monterey County Department of Public Works. Monitor existing trails for impact upon the riparian corridor. Develop and propose trail standards. Accept river management funds, grants, and deeds from public and private sources.

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 22 (3/11/85); Ordinance No. 69 (6/21/93)*

## **RULE 124 - RIVER MANAGEMENT AND REGULATIONS**

It shall be a violation of these Rules and Regulations, and an infraction/misdemeanor pursuant to the Monterey Peninsula Water Management District Law, (Sections 256 and 369, adopted by the California Legislature by Chapter 986, Statutes of 1981, and Chapter 767, Statutes of 1983, respectively) for any individual to do one or more of the following acts within the riparian corridor without a valid permit issued by this District:

- A. Damage, remove, alter, or otherwise injure the riverbank, riverbed, canal, or reservoir which lies within the riparian corridor of the Carmel River, or take water from any canal, ditch, flume, pipe or reservoir installed or operated by the Monterey Peninsula Water Management District.
- B. Damage, remove, alter or otherwise injure any sprinkler or irrigation system installed or operated by the Monterey Peninsula Water Management District.
- C. Damage, remove, alter, deface, or otherwise injure any sign, barrier, or obstruction erected by the Monterey Peninsula Water Management District upon the riverbank or riverbed of the Carmel River, or within the riparian corridor of the Carmel River.
- D. Damage, remove, or otherwise injure any tree within or upon the riverbank or riverbed of the Carmel River.
- E. Damage, remove, or otherwise injure native vegetation, excluding poison oak, within the riparian corridor.
- F. Construct, alter, damage, or otherwise injure any dike or trail within or upon the riparian corridor.
- G. Drive, ride, park or travel in a motorized vehicle upon the riverbank, riverbed, or riparian corridor of the Carmel River without a valid river access permit issued by this District.
- H. Fail, willfully, to observe any sign, marker, warning, notice, or direction which restricts or closes the Carmel River, or any portion of its bed or banks, to motorized vehicles.

The first offense of this rule shall be an infraction, punishable by a minimum fine of five hundred dollars (\$500). The minimum fine may be increased to a maximum of one thousand dollars (\$1,000) based upon the extent of damage caused.

The second offense of this rule shall be a misdemeanor, punishable by a fine not to exceed five thousand dollars (\$5,000), and imprisonment in the county jail not to exceed six months.

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 14 (11/12/84); Ordinance No. 69 (6/29/93)*

## **RULE 125 - RIVER ACCESS PERMITS**

- A. River access permits shall be required by any person who drives, rides, parks or travels in a motorized vehicle upon the riverbank, riverbed, or riparian corridor of the Carmel River. Permits for such activity shall be issued by the General Manager or the District Engineer who shall follow guidelines established by the Carmel River Advisory Committee. River access permits may be conditioned to affect the purposes of this regulation. Each river access permit granted by this rule may be revoked for cause by the General Manager.
  
- B. River access permits shall be granted for those portions of the riverbank and riparian corridor for uses which are necessary to the ordinary operation, maintenance, or repair of existing golf courses. River access permits shall be granted for all uses on lands within the state park system.
  
- C. Determinations of the General Manager or the District Engineer granting, denying or conditioning river access permits may be appealed to the Board of Directors pursuant to Rule 70, "Appeals" upon payment of the fee specified in Rule 63 (D).

*Rule added by Ordinance No. 14 (11/12/84)*

## **RULE 126 - RIVER WORK PERMITS**

### **A. REGULAR PROCEDURE**

River work permits shall be required by any person who undertakes riverbank or riverbed protection, riparian vegetation removal, channel modification or activities prohibited by Rule 124 within the riparian corridor, except where such activity is expressly exempt from this permit process in accord with Rule 126 B. Such a permit must be obtained prior to the commencement of any work or activity unless that activity is defined as a “minor work” or unless that activity is an “emergency work”. Minor works may be undertaken in accord with the process set forth in Rule 127 A (4) below. Emergency works may be undertaken in accord with the process set forth in Rule 127 B.

### **B. PERMIT EXEMPTIONS**

This District Board may from time to time, upon advice of the Carmel River Advisory Committee, designate river works which shall be exempt from this permit process, and therefore not be subject to the prohibitions set forth in Rule 124. District staff shall maintain and distribute a list of such exempt activities.

### **C. EMERGENCY PROCEDURE**

Emergency riverbank or riverbed protection or channel modification measures are excepted from the prior requirement for a river work permit, provided that the General Manager or District Engineer must first declare such an emergency to exist or to be imminent. Emergency work permits shall be processed in accord with Rule 127 B. When declaring an emergency, the General Manager or District Engineer shall take into account the high probability of flooding, erosion danger, blockage and structural damage. During a declared period of emergency, the District must be notified as soon as possible in writing of the type, location and extent of any emergency works. Application for approval shall then be made within 10 days after such emergency works were begun to the Monterey Peninsula Water Management District on forms supplied by the District and, if required by the General Manager or District Engineer, shall be accompanied by appropriate plans.

### **D. PROCEDURE WHERE A LIFE OR PROPERTY IS THREATENED**

Should an emergency situation arise that requires immediate bank protection actions to mitigate a clear and present danger to life or property, such actions may be performed without prior approval of the General Manager or District Engineer. Protective measures performed under this subsection shall be limited to those needed to mitigate such clear and present danger to life or property. Such activity shall immediately be communicated to the District, and within ten calendar days of the commencement of such actions the type, location, and extent of protective measures performed under this subsection shall be reported in writing to the District.

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 22 (3/11/85); Ordinance No. 14 (11/12/84)*

## RULE 127 - PERMIT PROCESS

### A. RIVER WORK PERMITS

1. Applications for river work permits shall be made to the Monterey Peninsula Water Management District on forms supplied by District staff and shall be accompanied by plans showing appropriate site, improvement and engineering information as may be required by District staff. The fee prescribed by Rule 60 shall be required for any river work permit.
2. Any application which appears to propose an activity regulated pursuant to the National Flood Insurance Program, including but not limited to:
  - a. grading or changes in land forms that might alter channel hydraulics or the configuration of the floodway, or
  - b. levees or other flood control works that might alter channel hydraulics or the configuration of the floodway, shall be referred for review and comment to the Monterey County Water Resources Agency.
3. A public hearing shall be held by the General Manager or District Engineer on the application after the District Staff determines that the information submitted by the applicant is sufficient to consider the matter; not less than ten (10) calendar days prior to the public hearing the District shall give notice of the hearing by one publication in a newspaper of general circulation and by posting notice in conspicuous places close to the properties affected by the application. The General Manager or his delegee shall have sole discretion as to where to post such notice, and a failure to post shall not invalidate the proceedings. The General Manager or his delegee shall also give notice of such hearing by mailing postage prepaid a notice of the time and place of such hearing to persons owning property adjacent to the exterior boundaries of the area actually occupied by the use for which the river work permit was applied. Addresses shall be used from the last equalized assessment roll, or alternatively, from such other records of the Assessor or the Tax Collector as contain more recent addresses in the opinion of the General Manager. No hearing shall be required of non-controversial minor works.
4. The Board of Directors shall by resolution promulgate upon advice of the Carmel River Advisory Committee a list of "minor works" for which permits, in the absence of controversy, may be granted by the General Manager upon payment of the fee prescribed by Rule 60 without published notice or public hearing. Minor work permits which have been issued shall be prominently posted in the Monterey Peninsula Water Management District office, and shall not become effective until seven (7) days after issuance. Such permits may be appealed to the Board pursuant to Rule 127 (C) of this regulation. Holders of a minor work permit may undertake such work immediately upon issuance of the permit (but

before the permit becomes effective), provided however, that each applicant for a minor work permit who undertakes work prior to the effective date of such permit agrees in writing to proceed during that seven-day period at his own risk, and agrees to indemnify and hold harmless the Monterey Peninsula Water Management District for any damage which may result, and agrees to comply with any Board order should the permit be denied or conditioned on appeal.

5. In order to grant a regular river work permit, an emergency work permit, a minor work permit, or the General Manager or the District Engineer shall make the following findings based upon facts apparent from the district files, the permit application or facts presented at the hearing:
  - a. the work allowed by the proposed permit does not appear to adversely affect adjoining or other properties;
  - b. the work allowed appears to be visually compatible with the natural appearance of the river channel, banks and riparian corridor;
  - c. the work allowed appears to be appropriate for the intended purpose, and be consistent with technical standards and plans set by the Carmel River advisory Committee;
  - d. the establishment, maintenance or operation of the use or work applied for does not appear under the circumstances of the particular case, to be detrimental to health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood or to the general welfare of the District, and
  - e. the work permitted appears either to comply with, or be exempt from the requirements of the National Flood Insurance Program.

Each permit shall briefly set forth or refer to the evidence supporting the findings.

6. The General Manager or the District Engineer may designate conditions in connection with the permit to secure the purposes of this regulation, in addition to any standard permit conditions which may be required by the Board. The General Manager or the District Engineer may also require bond and guarantees to assure compliance with the conditions.
7. Each permit issued by the General Manager or the District Engineer shall become effective seven (7) days after the date such permit was issued and remain valid until the date of expiration stated on the permit; or if no date of expiration is stated, or otherwise specified, all such permits shall expire one year from the date of granting said permit.

8. When a property owner wishes to maintain the river channel and/or riverbank on a regular basis, a river work permit may be issued by the General Manager or District Engineer upon the approval of an appropriate management plan. Permits granted for such ongoing activity under this rule shall state this basis for termination as follows:

“This permit shall terminate on the date set forth below; and if no date of termination is set, shall terminate one year after the repeal of this rule or regulation”.

## **B. EMERGENCY RIVER WORK PERMITS**

Emergency riverbank or riverbed protection or channel modification measures performed under this Regulation shall require a subsequent emergency river work permit from the General Manager or District Engineer. An application for such a permit shall be submitted within ten (10) calendar days after commencement of such measures. The fee prescribed by Rule 60 shall be required for any emergency river work permit. The intent of such a subsequent emergency river work permit is to ensure that any emergency bank and bed protection measures conform to or will be brought into conformance with the technical standards promulgated in accord with this regulation. To the extent practicable, emergency river work permits shall be administered and granted in accordance with Rule 127 A above, and may also be appealed to the Board in accord with Rule 127 C. Standards shall be developed and distributed summarizing the design concepts that will be required in emergency permits. Persons undertaking emergency works without prior approval shall bear sole responsibility for the adequacy and safety of such work, and shall be deemed to proceed at their own risk. The District, upon later review of the emergency work permit, reserves the right to require removal or modification of such works to that measure compatible with the structural management plan.

## **C. PERMIT APPEALS**

Determinations of the General Manager or the District Engineer may be appealed to the Board of Directors pursuant to Rule 70, “Appeals” upon payment of the fee specified in Rule 63 (D).

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 22 (3/11/85); Ordinance No. 14 (11/12/84); Ordinance No. 69 (6/21/93)*

## **RULE 128 - LIMITATIONS**

Notwithstanding any other provision of this regulation, neither the Monterey Peninsula Water Management District nor their Directors, officers, members, employees or staff shall be responsible by operation of these Rules and Regulation for the detection, prevention, or mitigation of erosion, floods or flood damage within the Monterey Peninsula Water Management District.

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 22 (3/11/85); Ordinance No. 14 (11/12/84)*

**RULE 129 - EFFECTIVE DATES**

Rules Nos. 20, 120 123, 124 and 127 as amended by Ordinance No. 69 shall be given effect at 12:01 a.m. July 21, 1993.

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 14 (11/12/84); Ordinance No. 22 (3/11/85); Ordinance No. 69 (6/21/93)*

## **RULE 130 - SUNSET PROVISIONS**

*Rule added by Ordinance No. 10 (7/26/83); amended by Ordinance No. 14 (11/12/84); deleted by Ordinance No. 69 (6/21/93)*