

## CALIFORNIA COASTAL COMMISSION

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## RECORD PACKET COPY

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## STAFF REPORT: REGULAR CALENDAR

**Application No.:** 2-01-033  
**Project Applicant:** Sonoma County Water Agency  
**Location:** The mouth of the Russian River, near Jenner, Sonoma County (Exhibit 1).  
**Project Description:** Periodically breach the sand bar at the mouth of the Russian River for flood control purposes.  
**Substantive File Documents:** Appendix A

## Executive Summary

The Sonoma County Water Agency (SCWA) requests a coastal development permit to allow the SCWA to continue to artificially breach the mouth of the Russian River to prevent flooding of public and private property and infrastructure and to maintain the water quality and biological productivity of the Russian River Estuary. The proposed breaching would result in the continuation of a long-standing practice of managing the river mouth predominantly as an open estuary by preventing extended sand bar-closed conditions.

In 1996, the Commission granted Coastal Development Permit 1-96-09 allowing the SCWA to breach the river mouth for a five-year period. As a condition of CDP 1-96-09, the County monitored the water quality and biological productivity of the estuary during this period to better inform future decisions concerning breaching and management of the estuary. Accordingly, the SCWA has submitted the required monitoring reports, documenting the effects of the breaching program to the water quality of the estuary as well as direct and indirect effects to fish and other macro-invertebrates, pinnipeds and plankton. This new information builds on the observations and recommendations of previous studies of the estuary.

The results of the monitoring program demonstrate that, in general, the ecosystem is adapted to the practice of managing the river mouth as an estuary with the sand bar open during most times. The monitoring program also demonstrates that extended closure of the river mouth combined with low flow conditions results in poor water quality due to high temperatures and low dissolved oxygen that can stress or kill fish and limit food availability. No significant adverse impacts have been observed as a result of the breaching. Thus, the monitoring program supports the continuation of regular breaching as proposed.

The staff recommends approval of the permit application with conditions requiring the SCWA to assume the risks associated with the breaching and to indemnify and hold harmless the Commission against any claims of injury or loss resulting from the permitted breaching. The staff also recommends that the Commission impose a condition prohibiting the SCWA from performing breaching within 36 hours of any weekend or holiday except under emergency conditions to minimize interference with public access use of the beach in the area near the breach site.

Since the time that the Commission last considered breaching of the river mouth, the Coho salmon, Chinook salmon, and Steelhead have all been listed as threatened species under the federal Endangered Species Act (ESA), and the Russian River has been designated critical habitat for each of these three species. Consequently, in 1997, the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District initiated the ESA Section 7 consultation process with the National Marine Fisheries Service (NMFS). The consultation process under Section 7 of the ESA requires the three agencies to prepare a Biological Assessment (BA) that evaluates the effects to the threatened salmonids of various facilities and operations within the Russian River watershed and several of its tributaries.

The SCWA's breaching program is one of the many flood control, water diversion and storage, hydroelectric power generation, and fish production and passage activities spanning the Russian River watershed to be addressed in the BA. The Final BA is scheduled to be completed by February 2003. NMFS will then prepare a Biological Opinion (BO) based on the findings and conclusions of the BA. The BO will direct future actions of the Corps, SCWA, and Mendocino County within the watershed and may restrict or modify the manner in which the SCWA may breach the river mouth. NMFS expects to issue the BO in mid-2003.

Because the BO may influence the manner in which future breaching operations are conducted, the staff recommends that the Commission impose **Special Condition 3** requiring the SCWA to submit an application for an amendment to this coastal development permit within 90 days of issuance of the final BO requesting Commission authorization of any required or recommended changes to the breaching program. In the event that NMFS neither requires nor recommends any material changes to the breaching program in the final BO, the Executive Director may waive this requirement for a permit amendment.

The project site is located partially on property administered by the California State Lands Commission. State Lands has granted a one-year lease to the SCWA for the proposed breaching. Because the Commission may only authorize development consistent with the permissions granted by the owner(s) of the affected property, staff recommends the Commission impose **Special Condition 4** limiting the approval to match the length of time authorized by the State Lands lease.

Because the proposed development is located within the Commission's retained coastal permit jurisdiction, the standard of review for this coastal development permit application is the Chapter 3 policies of the Coastal Act.

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## STAFF RECOMMENDATION

### 1.1 Motion

*I move that the Commission approve Coastal Development Permit No. 2-01-033 pursuant to the staff recommendation.*

Staff recommends a YES vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

### 1.2 Resolution to Approve the Permit

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

## 2.0 STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

## 3.0 SPECIAL CONDITIONS

The Commission grants this permit subject to the following special conditions:

1. **Assumption of Risk, Waiver of Liability and Indemnity.**

A. By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from flooding and surf or wave conditions; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

B. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a written agreement, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition.

2. **Schedule.** Except under emergency conditions requiring immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services, the breaching activities authorized herein shall not be initiated on or within 36 hours prior to any weekend or holiday.

3. **Management Plan Changes.** Within 90 days of final action by the National Marine Fisheries Service on a Biological Opinion addressing the threatened populations of chinook salmon, coho salmon, and steelhead in the Russian River, the permittee shall submit an application for an amendment to this coastal development permit requesting Commission authorization for any changes to the breaching program that are either required or recommended in the Biological Opinion. Such changes shall not be incorporated into the project until the permittee obtains a Commission amendment to this coastal development permit, unless the executive director determines that no amendment is legally required.

4. **Period of Time Development is Authorized.** Development is authorized by this permit only until December 31, 2002, except that the executive director may extend this authorization for any additional period authorized by the California State Lands Commission.

## **4.0 Findings and Declarations**

### **4.1 Project Description and Background**

#### **4.1.1 Site Description/Project Location**

The Russian River drains a large area of Sonoma and Mendocino Counties before discharging to the ocean at Jenner (Exhibits 1-5). The estuarine portion of the river extends approximately six to seven miles upstream to a point between Duncans Mills and Austin Creek. Tidal action has on occasion occurred as far as ten miles upstream. The rural lands surrounding the estuary are sparsely developed with the exceptions of the small communities of Jenner, Bridgehaven, and Duncans Mills. The floodplain within the river canyon contains some agricultural lands. The partially forested river canyon cuts through the Coast Range, creating a dramatic and highly scenic landscape. The headlands at the river mouth rise 50 to 200 feet above the sea and rocky

pinnacles rise from the seafloor offshore. The river turns northward near the mouth where it is flanked by a long barrier beach that extends north from Goat Rock, about 4,000 feet to the south.

The Russian River Estuary and the freshwater marsh on Willow Creek, a tributary that enters the river about a mile upstream from the mouth, provide important habitat for a diverse mix of flora and fauna. Estuaries provide particularly rich habitats, as the mixing of fresh and saltwater concentrates nutrients. A variety of habitat types line the banks of the river, including: freshwater marsh, coastal terrace prairie, redwood forest, Douglas fir forest, north coast riparian scrub, freshwater seep, and red alder riparian scrub. The estuary and river are designated critical habitat for the Chinook salmon, Coho salmon, and Steelhead, all of which are listed as threatened under the federal Endangered Species Act.

#### **4.1.2 Background**

The Sonoma County Water Agency (SCWA) requests a coastal development permit to breach the sand bar at the mouth of the river (see Exhibits 1-5). Like many coastal estuaries and lagoons along the California coast, the Russian River estuary is subject to frequent closure by the formation of a sand bar across the mouth of the estuary. The sand bar is created by the on-shore movement of sediment originally discharged from the river to the ocean during, peak precipitation and runoff events, and transported back to the mouth of the river by long, low-energy waves that reach the shore during low precipitation, minimum runoff periods. The closure of the estuary temporarily eliminates tidal exchange and creates ponding of the river, which results in a gradual increase of the water level in the estuary. The rise in water level can eventually lead to flooding of building foundations, residential yards, and agricultural lands. The flooding also has been known to jeopardize existing wells in the area. If left to its own accord, the estuary would eventually breach the sand bar naturally when water levels reach a height where it can overtop the crest of the sand bar. However, for many years, the sand bar has been artificially breached to alleviate flooding. No one knows precisely how long artificial breaches have been performed, but according to John Schrad of the Sonoma County Department of Roads, his department has been breaching the sand bar artificially at least since living memory.

Breaching is accomplished using a bulldozer to excavate a channel through the sand bar. Once breached, the water rushing through the channel acts to quickly widen and deepen the opening. Because this work constitutes a form of grading and involves the use of heavy equipment on a beach, the activity requires a coastal development permit. Beginning in the 1980's, the Executive Director issued a series of emergency permits to the County to allow breaching to prevent flooding. These emergency permits were conditioned to require the County to conduct an environmental review of the effects of breaching to the estuarine ecology and to subsequently apply for a regular coastal development permit for a long-term breaching program.

#### **4.1.3 Russian River Estuary Study 1992-1993**

In 1991, the County initiated a study to evaluate the impacts of breaching to the estuary with grant funding from the Coastal Conservancy. This study was conducted under the direction of the Russian River Estuary Interagency Task Force, which included representatives from the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, the California Department of Fish and Game, the California Department of Parks and Recreation, the California State Lands Commission, the Sonoma County Planning Department and the Coastal Commission. The study is based principally on data gathered in 1992 and 1993

and addresses hydrology, flooding, biology, and limnology. The resulting report, Russian River Estuary Study 1992-1993, considers management alternatives and recommends a preferred alternative for management of the estuary (RRIATF 1994).

#### **4.1.4 Prior Commission Action**

In 1996, the Commission granted CDP 1-96-09 to the Sonoma County Water Agency (SCWA) authorizing periodic breaching for a five-year period ending December 31, 2001 (CCC 1996). This permit incorporated many of the recommendations of the Estuary Study, including conditions requiring the SCWA to monitor the effects of breaching to the water quality and biological productivity of the estuary. Accordingly, the SCWA has submitted five annual monitoring reports for the years 1996 through 2000, documenting the effects of the breaching program to the water quality of the estuary as well as direct and indirect effects to fish and other macro-invertebrates, pinnipeds and plankton (MSC 1997, MSC 1998, MSC 1999, MSC 2000, and SCWA 2001).

The results of the monitoring program demonstrate that, in general, the ecosystem is adapted to the practice of managing the river mouth as an estuary with the sand bar open during most times. The monitoring program also demonstrates that extended closure of the river mouth combined with low flow conditions results in poor water quality due to high temperatures and low dissolved oxygen that can stress or kill fish and limit food availability. No significant adverse impacts have been observed as a result of the breaching. Thus, the monitoring program generally supports the continuation of regular breaching.

#### **4.1.5 Species Listings**

Since the time that the Commission acted on CDP 1-96-09, the coho salmon, chinook salmon, and steelhead have all been listed as threatened species under the federal Endangered Species Act (ESA), and the Russian River has been designated critical habitat for each of these three species. Consequently, in 1997, the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District initiated the ESA Section 7 consultation process with the National Marine Fisheries Service (NMFS). The consultation process under Section 7 of the ESA requires the three agencies to prepare a Biological Assessment (BA) that evaluates the effects to the threatened salmonids of various facilities and operations within the Russian River watershed and several of its tributaries.

The SCWA's breaching program is one of the many flood control, water diversion and storage, hydroelectric power generation, and fish production and passage activities spanning the Russian River watershed to be addressed in the BA. The Final BA is scheduled to be completed by February 2003. NMFS will then prepare a Biological Opinion (BO) based on the findings and conclusions of the BA. The BO will direct future actions of the Corps, SCWA, and Mendocino County within the watershed and may restrict or modify the manner in which the SCWA may breach the river mouth. NMFS expects to issue the BO in mid-2003.

#### **4.1.6 Current Breaching Plan and Schedule**

The SCWA proposes to breach the sand bar approximately 5 to 15 times annually during calendar years 2002 and 2003, using the same procedures and methods as it has in the past several years. During most years, the sand bar opens naturally following the first significant

winter rains and remains open until mid to late summer. Thus, most breaching occurs in the late summer and fall. However, in 1997, the first breaching occurred in March. Consistent with past practice, the SCWA proposes to breach the sand bar when the water level in the estuary reaches between 4.5 and 7 feet NGVD. The water level would continue to be monitored by an existing gage installed under CDP 1-96-09 located at the Jenner Visitors Center. The SCWA would breach the sand bar by using a Cat D6 bulldozer to excavate an approximately 100-foot long, 25-foot wide, and 6-foot deep channel, during the outgoing tide, sidecasting the excavated sand on the adjacent beach. Breaching would take 2 to 3 hours. The bulldozer would access the breach site from the Goat Rock State Beach parking lot south of the river mouth.

To protect public safety and to minimize disturbance to harbor seals, the SCWA proposes to restrict public access by posting signs and erecting temporary barriers within 750 feet of the breach site 24-hours prior to breaching and for a 24-hour period thereafter (see Exhibits 4, 6 and 7). In accordance with the terms of California Department of Parks and Recreation Temporary Use Permit for the breaching (see Section 4.2 below), the SCWA would breach the sand bar on Mondays through Thursdays and not during or within 36 hours of any weekend or holiday to minimize interference with public access and recreation in the area.

The SCWA does not propose to continue the detailed monitoring program conducted between 1996 and 2001 because the results of past monitoring demonstrate that breaching has not resulted in any significant adverse impacts to the estuarine ecosystem and because detailed studies of the Russian River ecosystem are currently being conducted through the ESA Section 7 consultation process.

## **4.2 Other Agency Approvals**

### **4.2.1 California State Lands Commission**

Breaching the sand bar affects state tidelands, submerged lands, and public trust lands. Uses of such lands are regulated by the California State Lands Commission. On January 30, 2002, the State Lands Commission granted General Lease WP7918 to the SCWA allowing the SCWA to breach the sand bar for a one-year period. The Commission can only grant a permit for the period during which State Lands, as the underlying property owner, has authorized the subject development. Accordingly, **Special Condition 3** specifies that this coastal development permit authorizes development only until December 31, 2002. The executive director may extend this period to correspond with any extension(s) granted by the State Lands.

### **4.2.2 North Coast Regional Water Quality Control Board**

Breaching the sand bar causes temporary increases in turbidity in the area immediately offshore of the breach site and affects the water quality within the estuary. On August 27, 1981, the North Coast Regional Water Quality Control Board (RWQCB) issued Regional Water Board Order 81-73, Waste Discharge Requirements to the SCWA for the routine construction, diversion, storage, and disposition of storm, flood and other surface waters in Sonoma County. By letter dated May 10, 1996, the RWQCB determined that breaching the sand bar by the SCWA is regulated under Regional Water Board Order 81-73 and that no further approval is required by the RWQCB for this activity. Therefore, pursuant to Coastal Act Section 30412, Commission approval of a coastal development permit for the proposed breaching activity would not conflict



with any determination by the RWQCB related to water quality or the administration of water rights.

#### **4.2.3 California Department of Parks and Recreation**

The breach site is located on Goat Rock State Beach, which is managed by the California Department of Parks and Recreation (State Parks). On January 31, 2002, the State Parks granted a Temporary Use Permit authorizing the SCWA to enter Parks property and to breach the sand bar for a two-year period ending on January 31, 2004. The Temporary Use Permit imposes several conditions intended to minimize conflicts between breaching operations and public access and recreation, to protect public safety, and to minimize human disturbance of harbor seals. These conditions are discussed in greater detail under the Public Access/Public Recreation and Biological Resources sections below.

#### **4.2.4 California Department of Fish and Game**

Breaching the sand bar involves the removal of materials from and alteration of a river and streambed bottom and is therefore regulated under the California Fish and Game Code. On October 24, 1996, the California Department of Fish and Game (CDFG) granted Streambed Alteration Permit III-1176-96 to the SWCA authorizing periodic breaching for a period ending on November 10, 2001. On November 14, 2001, CDFG renewed Streambed Alteration Permit III-1176-96 through December 31, 2002.

#### **4.2.5 U.S. Army Corps of Engineers**

Because breaching the sand bar affects waters of the U.S., the activity is regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. On May 20, 1997, the Corps granted Permit No. 221210N to the SCWA authorizing breaching through December 31, 2001. On December 19, 2000, the Corps extended Permit No. 221210N until December 31, 2002. In accordance with the federal Coastal Zone Management Act, the Corps permit is only valid if the Commission determines that the permitted activity is consistent with the California Coastal Act. The Commission's previous action approving CDP 1-96-09 served as the required federal consistency determination for the Corps' 1997 approval of Permit No. 221210N. However, since CDP 1-96-09 has expired, the Commission must conduct a new federal consistency review to consider the Corps' action extending Permit No. 221210N. The Commission's action on CDP application 2-01-033 will function as the Commission's federal consistency certification for the Corps' permit extension.

### **4.3 Biological Resources**

#### **4.3.1 Issue Summary**

The Russian River Estuary provides habitat for several protected species, including chinook salmon, coho salmon and steelhead, which are all listed as threatened under the federal Endangered Species Act, and harbor seals and sea lions which are protected under the Marine Mammal Protection Act. As such, the estuary is considered an environmentally sensitive habitat area (ESHA) under the Coastal Act.

The Coastal Act requires that the habitat values of ESHAs are protected against significant disruption. Thus, the Commission must consider whether the proposed breaching would result in

a significant disruption of the habitat values of the estuary. In addition, the Coastal Act requires the protection of marine resources and of the biological productivity and quality of coastal waters. The Commission must evaluate the effects of the proposed breaching against these standards.

The effects of breaching to the biological productivity and water quality of the Russian River Estuary have been extensively studied beginning in 1992 and continuing through 2000. These studies include the Russian River Estuary Study 1992-1993 (RREITF 1994), biological and water quality monitoring conducted from 1996 through 2000 (MSC 1997, MSC 1998, MSC 1999, MSC 2000, and SCWA 2001), and the Russian River Biological Assessment Interim Report 8: Russian River Management Plan (ENTRIX 2001). Throughout these studies, no significant adverse impacts have been identified as a result of breaching to the estuarine ecosystem, sensitive or protected flora or fauna, or water quality.

Although no significant adverse impacts have been documented as a result of breaching, the above-cited studies recommend mitigation measures to avoid or minimize potential adverse impacts. These mitigation measures are either incorporated by the SCWA as part of the project description for the permit application or are required as conditions of this and other agencies' permits. Therefore, the Commission finds that, as conditioned, the proposed breaching will not result in a significant disruption of the habitat values of the estuary and will protect the biological productivity and quality of coastal waters consistent with the requirements of the Coastal Act.

#### 4.3.2 Standard of Review

Coastal Act Section 30230 states:

*Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Coastal Act Section 30231 states:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30240(a) states:

*Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

"Environmentally sensitive area" is defined under Coastal Act Section 30107.5 as follows:

*"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Because the river supports threatened populations of chinook salmon, coho salmon, and steelhead, as well as federally protected harbor seals and sea lions, it fits the Coastal Act definition of an environmentally sensitive habitat area (ESHA) provided above. Therefore, in accordance with Coastal Act Section 30240(a), the Commission must consider whether the proposed breaching would significantly disrupt the habitat values of the river. In addition, pursuant to Coastal Act Section 30230, the Commission must evaluate whether the proposed breaching would be carried out in a manner that will sustain the biological productivity of the river and estuary and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes. Consistent with Coastal Act Section 30231, the Commission must determine if the project will protect the biological productivity and the quality of the Russian River Estuary to maintain optimum populations of marine organisms.

#### **4.3.3 Salmonids**

Chinook salmon, coho salmon and steelhead all spawn in the Russian River. Each of these species is listed as threatened under the federal Endangered Species Act. All three species are anadromous – migrating upstream from the ocean as adults to spawn in the river – although steelhead may also spend their entire life in freshwater. The fish lay their eggs in gravel beds, which generally hatch in winter and spring. Juveniles spend varying amounts of time rearing in the river and/or tributaries and then migrate out to the ocean. Coho salmon and steelhead are native to the Russian River, although these fishes have also been planted in the river from other river systems. Although it is uncertain whether native populations of chinook salmon used the Russian River historically, stocked chinook presently spawn in the river.

The Russian River is within an Evolutionary Significant Unit for each of the three listed species. The National Marine Fisheries Service (NMFS) has designated the estuarine and freshwater portions of the Russian River, including all waterways, substrate, and adjacent riparian zones (except the areas above the Warm Springs and Coyote Valley dams and within tribal lands) as critical habitat for each of the three species (Fed. Reg. 64(86):24049-24062; 65(32):7764-7787).

Potentially significant adverse effects of artificial breaching to the listed salmonids include: (1) changes in water quality in the estuarine portion of the river, (2) effects to adult migration and juvenile outmigration, and (3) increased predation.

#### ***Water Quality Affects to Salmonids***

Artificial breaching affects water quality in the estuary, including salinity, temperature and dissolved oxygen. Water quality in the estuary has been monitored extensively, beginning in 1992 and continuing through 2000. These studies include the Russian River Estuary Study 1992-1993 (RREITF 1994), biological and water quality monitoring conducted from 1996 through 2000 (MSC 1997; MSC 1998, MSC 1999, MSC 2000, and SCWA 2001), and the Russian River Biological Assessment Interim Report 8: Russian River Management Plan (ENTRIX 2001). Data for these studies were collected over several years, before, during and

after breaching at multiple sites in the river from near the mouth to Sheephouse Creek (Exhibit 8). In addition, datasondes were used to record hourly temperature, salinity, and DO a few centimeters from the river bottom at stations in the estuary and in Willow Creek. The findings of these studies concerning water quality are summarized below.

In general, artificial breaching is an important factor affecting water quality in the estuary. Other important factors affecting water quality include river flow and tides. Water quality in the estuary is generally better when the sand bar is open than when it is closed. Poor water quality has also been observed under low river flow conditions and during neap<sup>1</sup> tides. In general, water quality conditions that are detrimental to salmonids develop in the estuary when the sand bar remains closed for longer than 14 days (ENTRIX 2001).

With the sand bar open, tidal mixing maintains higher levels of dissolved oxygen (DO) and reduced temperatures favorable to salmonids. When the sand bar closes, the fresh and saltwater in the estuary separate or stratify into layers with the denser seawater sinking to the deeper pools. This leads to high salinity and rapidly declining DO in the near bottom layers of deep pools. Surface water DO levels are higher than near bottom levels with the sand bar closed, but surface temperatures increase significantly without tidal mixing. Poor water quality with anoxic conditions in the near bottom layers and high surface water temperatures generally develop within 14 days of sand bar closure. Once breached, tidal mixing quickly increases DO levels and reduces temperatures near the river mouth, but anoxic conditions may persist in the upper reaches of the estuary for longer periods, particularly during neap tide and/or low river flow conditions. In 1992, a fish and invertebrate kill occurred following breaching when the water level in the estuary was over nine feet NGVD. This event is thought to have resulted from the sudden flushing of a large volume of anoxic water that formed due to the flooding of extensive areas within the Willow Creek Marsh at such high water levels (RREITF 1994). This is the only time that such an event has been observed since the effects of breaching have been monitored beginning in 1992. Breaching at water levels of 7 feet or lower as proposed is thought to prevent significant outflow of anoxic water from the Willow Creek Marsh (RREITF 1994, ENTRIX 2001).

Poor water quality in the estuary has the potential to adversely affect juvenile salmonids rearing in the estuary. Before migrating out to the ocean, juveniles must undergo a physiological change that allows them to make the transition from fresh to saltwater. Chinook generally rear in the estuary in February through June. Juvenile steelhead have been observed in the estuary year round. Juvenile coho have generally been observed to rear throughout the year in tributaries to the mainstem of the river and not the estuary. However, juvenile coho have been observed rearing in estuarine portions of other river systems. Thus, the possibility exists that some Russian River coho may rear in the estuary. Poor water quality conditions in the estuary can significantly impact rearing juveniles. As such, the maintenance of good water quality conditions in the estuary is considered important for the recovery of salmonids in the Russian River (ENTRIX 2001).

As proposed, breaching the sand bar at water levels between 4.5 to 7 feet NGVD would prevent the formation of poor water quality conditions in the estuary (RREITF 1994, MSC 1997, MSC 1998, MSC 1999, MSC 2000, SCWA 2001, and ENTRIX 2001). Maintaining good water quality conditions to support rearing salmonids in the estuary is important for the recovery of

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<sup>1</sup>A "neap" tide is the tide midway between spring tides that attain the least height.

these species. Therefore, the Commission finds that as proposed the water quality effects of the breaching program are consistent with the water quality and sensitive habitat protection requirements of Coastal Act Sections 30230, 30231, and 30240(a).

### ***Effects to Salmonid Migration***

Peak adult migration of each of the three threatened salmonids follows the onset of the winter rainy season when the sand bar remains open naturally. The adult migration periods are as follows:

- Coho                November through January
- Steelhead        January through March
- Chinook          Mid-August through January (with peak occurring after November)

Since adult coho and steelhead do not begin their migration until after the onset of winter rains, at which time the sand bar remains open naturally, the proposed breaching would have no effect to adult migrants of these species. Although most adult chinook migrate after November and are also unaffected by the proposed breaching, some early adult migrants may enter the river as early as mid-August. The proposed breaching may provide additional opportunities for adult chinook to move into the river early in the season when flows are too low to open the sand bar naturally. This could subject fish that enter the river when water quality conditions are poor to stress. Individual chinook have been observed in past years that have entered the river early when water temperatures were unfavorably warm. However, since most chinook migrate after November, this potential impact to early migrants is not considered significant to the population of chinook that spawn in the river (ENTRIX 2001). Nevertheless, the Commission must evaluate the significance of this impact and determine whether it could feasibly be avoided.

Once the sand bar is breached, there is no practical or effective means to prevent early migrant chinook from entering the river. Thus, the only alternative that would prevent potential impacts to chinook that enter the river during low flow conditions would be to allow the sand bar to remain closed until the onset of winter rains. For all practical purposes, this would be the equivalent of the "no project" alternative. Setting aside the fact that this would result in flooding low lying properties adjacent to the river, the poor water quality conditions that would develop with the sand bar closed for an extended period would be detrimental to rearing juvenile salmonids in the estuary. According to the Russian River Biological Assessment Interim Report 8:

*[G]iven the importance local estuarine systems for rearing, maintaining good rearing conditions in this critical habitat is an important component in the recovery of these species. [sic] (ENTRIX 2001)*

Thus, while the potential that breaching would allow individual migrant chinook to enter the river early during low flow conditions is not considered to be a significant impact to the chinook population that spawns in the Russian River, the poor rearing conditions that would result in the estuary without breaching would significantly impact the recovery of steelhead, chinook and possibly some coho. The water quality benefits of breaching to rearing juveniles has a greater influence on the recovery of the species than the potential adverse impacts of breaching to individual early migrant chinook.

Juvenile salmonids migrate out to the ocean during the spring, generally corresponding with spring rains. In most spring seasons, the sand bar is open naturally and water quality is good due to high spring flows. Thus, in most years, the proposed breaching would have no effect to out-migration of juvenile salmonids. Under unusually low spring flow conditions, such as during a drought, breaching under the proposed management plan could occur early in the season. For example, in 1997, the first breaching occurred in March. Under such conditions, the proposed breaching would result in additional opportunities for juveniles to pass through the estuary to the ocean. Since it improves water quality conditions in the estuary, early breaching in drought years would also improve water quality conditions affecting out-migrating juveniles. Thus, such occasional early season breaching would have a beneficial impact to out-migrating juvenile salmonids.

For the most part, salmonid migration both into and out of the river occurs when the sand bar is open due to natural river flow conditions. Thus, the proposed breaching has little effect on migration. Nevertheless, occasional early season breaching would have a beneficial effect to out-migrating juveniles, while breaching in the late summer and fall may adversely affect some early migrant chinook. As stated above, breaching is more beneficial to rearing juveniles in the estuary than it is detrimental to the recovery of the threatened populations of chinook salmon, coho salmon, and steelhead in the Russian River. Thus, allowing the sand bar to remain closed until the onset of winter rains to prevent early migrating chinook from entering the river is not a less environmentally damaging alternative. Moreover, as discussed in Section 4.4 below, this is not a feasible alternative because it would cause flooding of public and private property and infrastructure. Therefore, notwithstanding the potential for some impact to early migrant chinook, the Commission finds that the proposed breaching is consistent with the biological resource and habitat protection requirements of Coastal Act Sections 30230, 30231 and 30240.

### **Predation**

Pinnipeds, primarily harbor seals, congregate at the mouth of the Russian River and are known to feed on both juvenile and adult salmonids. While pinniped predation is natural, breaching the sand bar has the potential to increase predation by concentrating migrating fish in a narrow breach opening. The Russian River Biological Assessment Interim Report 8 concludes with respect to this potential impact that:

*[W]hile some migrating salmonids may be affected, the risk to the populations of listed fish species is low. (ENTRIX 2001)*

This conclusion is based on the following observations. Most artificial breaching occurs in the late summer and fall while peak salmonid migration occurs in the winter and spring. Thus, as discussed above, artificial breaching affects only a small proportion of migrating fish – primarily early migrant chinook. The harbor seal population at the mouth of the river peaks in late winter and mid summer and decreases substantially when the sand bar is closed, i.e., at the times that artificial breaching would occur (Hanson 1993). Thus, the harbor seal population at the river mouth tends to be at its lowest at the times when most artificial breaching would be undertaken. Because the proposed breaching would correspond during most years at the time when both pinniped population is low and salmonid migration is low, breaching would not result in a significant increase in pinniped predation on migrating salmonids.

Although the opening in the sand bar is necessarily narrow when the bulldozer first cuts it, water draining out of the estuary rapidly scours a wide channel, typically approximately 100 feet wide. Thus, the channel is only narrow enough to concentrate fish passage for a short period time immediately following breaching.

A study of harbor seal scat samples conducted at the Russian River mouth in 1989-1990 found salmonid remains in only 5% of the samples collected when the sand bar was open (Hanson 1993). Based on this observation, migrating salmonids do not appear to comprise a significant portion of harbor seal prey under sand bar-open conditions. However, the remains of salmonid smolt were found in 17% of scat samples collected when the sand bar was closed. This observation corresponded with an unusually large release of smolt from the Warm Springs Hatchery that was subsequently trapped in the estuary while the sand bar was closed. Most hatchery releases occur in the spring when the sand bar is open naturally. Thus, this was an unusual event that has not been documented at any other time. Nevertheless, artificial breaching as proposed would provide additional opportunities for hatchery-released fish to escape the estuary if the sand bar was closed earlier in the season than normal. Under such conditions, the proposed breaching would reduce predation on hatchery-released juveniles.

For the reasons stated above, the Commission concurs with the determination of the Russian River Biological Assessment Interim Report 8 that while the proposed breaching may increase predation on some migrating salmonids, this increased predation would not be significant, and the risk to the populations of listed fish species is low. The Commission further finds that the proposed breaching would provide additional opportunities for hatchery-released fish to escape the estuary during years when the sand bar closes earlier in the season than normal. Therefore, the Commission finds that with respect to its effects on pinniped predation of salmonids, the proposed breaching is consistent with the biological resource and sensitive habitat protection requirements of Coastal Act Sections 30230, 30231, and 30240.

#### **4.3.4 Pinnipeds**

The mouth of the Russian River is an important habitat area for both harbor seals and to a lesser degree California sea lions. Harbor seals haul out at the sandspit on either side of the river mouth and forage both inside the estuary and in the ocean nearby year round. During peak use periods in late winter and mid summer, harbor seals at the river mouth number in the hundreds. A small number of California sea lions, usually no more than five individuals, forage in the area near the river mouth from December through June each year, but do not usually haul out at the site.

The effects of artificial breaching to pinnipeds at the Russian River mouth were studied in 1989 through 1992 (Hanson 1993) and as a part of the monitoring undertaken by the SCWA in 1996 through 2000 as required by CDP 1-96-09 (MSC 1997, MSC 1998, MSC 1999, MSC 2000, and SCWA 2001). As reported in these studies, harbor seals haul out at the site primarily when the sand bar is open and are generally in low numbers or absent altogether when the sand bar is closed in late summer and fall when closings are most common. In general, these studies conclude that artificial breaching does not result in significant adverse impacts to pinnipeds.

However, when harbor seals are present at the haulout during sand bar-closed conditions, artificial breaching has both direct and indirect disturbance effects. Upon the approach of the work crew to begin breaching, all harbor seals hauled out near the breach site are flushed from



the area. Seals typically attempt to return to the haulout soon after breaching. However, beach visitors approaching the breach site cause hauled out seals to flee the beach. The above-cited studies document that the disturbance impact to harbor seals of curious visitors approaching the site following breaching is greater than the disturbance caused by the breaching activity itself. Nevertheless, the studies conclude that the temporary flushing of seals from the sand bar does not significantly impact the species.

Although temporary flushing does not significantly impact harbor seals hauled out near the breach site, the SCWA proposes to restrict access to the area during breaching to minimize the disturbance effect (as well as to protect the public from hazards as further discussed below). This requirement is supported by the 1996 through 2000 SCWA monitoring studies, and is required as a condition of the SCWA's current temporary use permit for the proposed breaching from the State Department of Parks and Recreation. As such, in the project description presented for CDP Application 2-01-033, the SCWA proposes to restrict public access within 750 feet of the breach site for a period of 24 hours prior to and 24 hours following breaching (see also Sections 4.4 and 4.5 below).

The Commission finds that the proposal to restrict access to the breach site as described in CDP Application 2-01-033 would minimize the disturbance impacts of the proposed breaching to harbor seals and is therefore an appropriate mitigation measure consistent with the requirements of Coastal Act Sections 30230, 30231, and 30240. The Commission therefore finds that as proposed to provide for restricted beach access before and after breaching, the proposed artificial breaching would not significantly disrupt the habitat values of the project site for pinnipeds and would protect the biological productivity and quality of coastal waters and of the marine environment consistent with the requirements of Coastal Act Sections 30230, 30231, and 30240.

#### 4.4 Hazards

Section 30253 of the Coastal Act provides in applicable part that new Development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

The primary purpose of the proposed breaching program is to minimize the risk of flooding in a manner that is consistent with Section 30253 of the Coastal Act. Without artificial breaching as proposed, the river would flood low-lying properties adjacent to the estuary. The height of the barrier beach is dependent upon the prevailing wave conditions and is typically in the range from 6.0 to 15 feet NGVD. Thus, unless artificially breached, the water level in the estuary would reach this range before the sand bar would breach naturally. Under worst-case conditions, the water level could rise to as high as 15 feet NGVD. Minimal to moderate flooding problems occur when river water levels rise to between 7 and 9 feet, resulting in increased bank erosion, loss of vegetation, loss of use of parking areas, pasture land, stairs, decks and beaches. At 10 feet NGVD, flooding of homes begins. The Russian River Estuary Study 1992-1993 indicates that about 15 residences in and around Jenner and Bridgeport are situated at or below the 10-foot level (RRIATF 1994). There have been reports of flooding of basements and lower levels of homes when water levels have risen to the 10 feet or greater. In addition, high water that occurs



when the mouth remains closed for an extended period has reportedly lead to the contamination of the infiltration well used by the Rancho Del Paradiso Water Company to serve 61 homes on Freezeout Road in Duncan's Mills. Thus, failing to breach the sand bar when the water level in the estuary reaches 4.5 to 7.0 feet NGVD as proposed would result in significant flood hazards.

The SCWA monitoring reports for 1996 through 2000 identified no significant flooding hazards associated with breaching the sand bar at 4.5 to 7.0 feet as proposed. However, a significant hazard is associated with the breaching itself. Breaching the sand bar creates a potential hazard to the public as the water from the river rapidly discharges to the ocean. During the first several minutes immediately following breaching, standing waves in excess of 10 feet high with velocities in excess of 20 feet per second have been observed as the river drains through the breach opening. In its action on CDP 1-96-09, the Commission required the SCWA to restrict access within 750 feet of the breach site during and up to 24 hours following breaching to protect the public from this hazard. The State Department of Parks and Recreation have imposed this same requirement as a condition of the temporary use permit granted for the current breaching proposal. As such, the SCWA has incorporated this requirement into its coastal development permit application.

Specifically, the SCWA proposes to post the site with signs and to cordon off the area for 24 hours prior to breaching until 24 hours following breaching. The signs are posted approximately 750 feet on either side of the breaching site (north and south sides of the sand bar). Two signs are posted at each location. One sign warns the public of the scheduled breaching event, including the date, and cautions visitors to stay away from the excavation area. The second sign explains pinniped protection during breaching activities (see Exhibits 4, 6 and 7). At the same location, yellow caution tape is placed between posts across the sand bar to provide an additional warning to visitors and to delineate the work area. The signs and barrier tape remain on the sand bar until 24 hours after the excavation work and are then removed by SCWA staff. SCWA staff is present on site on the scheduled breaching day, and are usually at the site about an hour before and after the excavation. In addition to the equipment operator, there is at least one person on either side of the excavation site to keep visitors away from the site. There is also at least one person posted at the Highway 1 overlook of the site. All staff members are in radio-communication and are equipped with life jackets, throw ring/bag and rope, and an air horn. The State Parks district office and ranger stations are contacted 24 to 36 hours prior to the scheduled breaching event.

The Commission finds that the proposed procedures for closure of the beach in the vicinity of the breach site before and after breaching would reduce the risk of hazards to the public caused by the proposed breaching. However, the SCWA monitoring reports submitted pursuant to CDP 1-96-09 document that despite such measures, some beach users ignore or fail to notice the signs, barriers, and, to a notably lesser extent, SCWA and State Parks personnel, and persist in approaching the breach site when conditions may be hazardous. Therefore, despite the proposed measures to restrict public access from the breach site, a potential risk of hazard to the public remains.

Because the SCWA proposes to undertake an inherently hazardous activity, the Commission imposes **Special Condition 1**, requiring the SCWA to assume the risks of any losses associated with the proposed breaching due to hazards resulting from the proposed breaching, waive any claim of liability on the part of the Commission for such losses, and indemnify the Commission in the event that third parties bring an action against the Commission as a result

of the any hazards associated with the proposed breaching. The Commission finds that **Special Condition 1** is required because the SCWA has voluntarily chosen to implement the project despite the risk of hazards. Therefore, as conditioned, the Commission finds that the proposed breaching would be undertaken in a manner that minimizes risks to life and property in areas of high flood hazard and is consistent with Section 30253 of the Coastal Act.

#### 4.5 Public Access

Coastal Act Section 30211 states:

*Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act Section 30214 states in applicable part:

*(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:*

...

*(2) The capacity of the site to sustain use and at what level of intensity.*

As discussed in Sections 5.3 and 5.4 above, the SCWA proposes to restrict public access on the beach in the vicinity of the breach site for a period lasting from 24 hours before until 24 hours after each breaching event. The proposed beach closures would temporarily interfere with the public's rights to access the shoreline on a state-owned public beach each time that the sand bar is breached. Based on past experience, the SCWA estimates that breaching as proposed would occur between 5 to 15 times per year. Thus, public access would be restricted in the area around the breach site for a total of approximately 10 to 30 days per year. As such, the Commission must consider whether the proposed project conflicts with the public access policies of the Coastal Act.

Coastal Act Section 30211 prohibits development that would interfere with the public's rights to access to the sea, including the use of dry sand, on public beaches. Therefore, the proposal to close the beach in the area of the breach site before and after breaching raises an issue of conformity with Section 30211. However, pursuant to Coastal Act Section 30214, the public access policies of the Coastal Act, including Section 30211, must be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the capacity of the site to sustain use and at what level of intensity.

As discussed in Sections 5.3 and 5.4 above, the proposal to temporarily restrict public access in the vicinity of the breach site is necessary to minimize disturbance to harbor seals and to protect the public from a significant safety hazard. These are both important considerations that require the Commission to regulate the time, place and manner of public access in the area of the breach site. During all times other than the 10 to 30 days corresponding with breaching, the beach at the river mouth is open to public access as part of the California Department of Parks and Recreation Sonoma Coast State Beach component, and sustains a high level of use. However, as discussed

above, the capacity of the site to sustain public access use is severely constrained during the period that artificial breaching occurs by the need to protect harbor seals from human disturbance and by the need to protect the public from the significant safety hazard created by breaching. In order to minimize the impacts of beach closure to the public, State Parks has required as a condition of its temporary use permit for the approved project that breaching shall be conducted on Mondays through Thursdays and is prohibited within 36 hours prior to a weekend or holiday except under emergency conditions. Pursuant to Special Condition 2, the Commission imposes these same limitations on the breaching schedule in order to minimize conflicts with public beach use. Therefore, as conditioned to minimize the temporary interference with public access in the area near the breach site, the Commission finds that the proposed project is consistent with the public access policies of the Coastal Act.

#### **4.6 CEQA**

Section 13096 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act policies at this point as if set forth in full. The proposed project has been conditioned to be found consistent with the policies of the Coastal Act and to minimize all adverse environmental effects. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, and can be found consistent with Coastal Act requirements to conform to CEQA.

## **APPENDIX A**

### **References**

- ENTRIX 2001. Russian River Biological Assessment Interim Report 8: Russian River Estuary Management Plan. ENTRIX, Inc. January 12, 2001.
- Hanson 1993. Russian River Study Pinniped Report. L. Hanson, J. Mortenson, E. Twohy. April 15, 1993.
- MSC 1997. Biological and Water Quality Monitoring in the Russian River Estuary, 1996. Merritt Smith Consulting. February 21, 1997.
- \_\_\_\_ 1998. Biological and Water Quality Monitoring in the Russian River Estuary, 1997. Merritt Smith Consulting. February 5, 1998.
- \_\_\_\_ 1999. Biological and Water Quality Monitoring in the Russian River Estuary, 1998. Merritt Smith Consulting. March 15, 1999.
- \_\_\_\_ 2000. Biological and Water Quality Monitoring in the Russian River Estuary, 1999. Merritt Smith Consulting. March 24, 2000.
- RREITF 1994. Russian River Estuary Study 1992-1993. Russian River Interagency Task Force. 1994.
- SCWA 2001. Biological and Water Quality Monitoring in the Russian River Estuary, 2000. Sonoma County Water Agency. June 12, 2001.

SPECIAL PROJECTS \ RUSSIAN RIVER ESTUARY - BREACHING SEPT 19, 2001

EXHIBIT NO.	1
APPLICATION NO.	2-01-033
Sonoma County Water Agency	



PROJECT SITE

RUSSIAN RIVER ESTUARY

JENNER

PENNY ISLAND

GOAT ROCK RD

HWY 1

SHEEPHOUSE CREEK

HWY 116

BRIDGE HAVEN

HWY 1

RUSSIAN RIVER

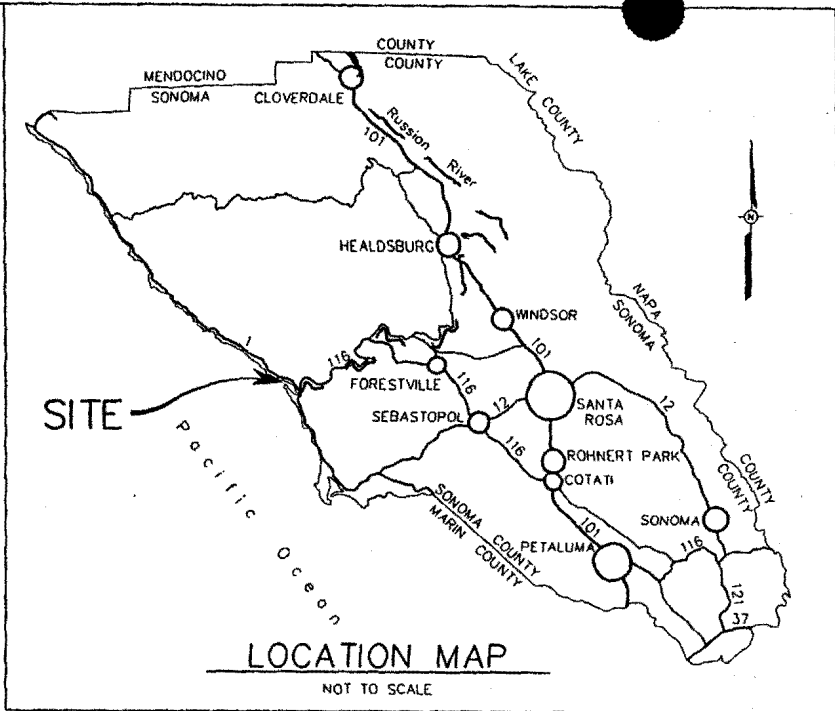
WILLOW CREEK RD

WILLOW CRK

RIVER

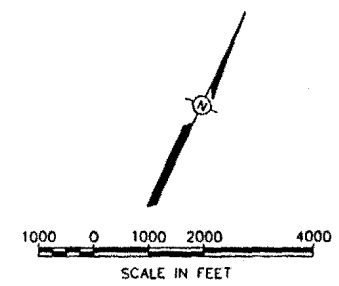
HWY 116

MOSCOW RD  
DUNCANS MILLS



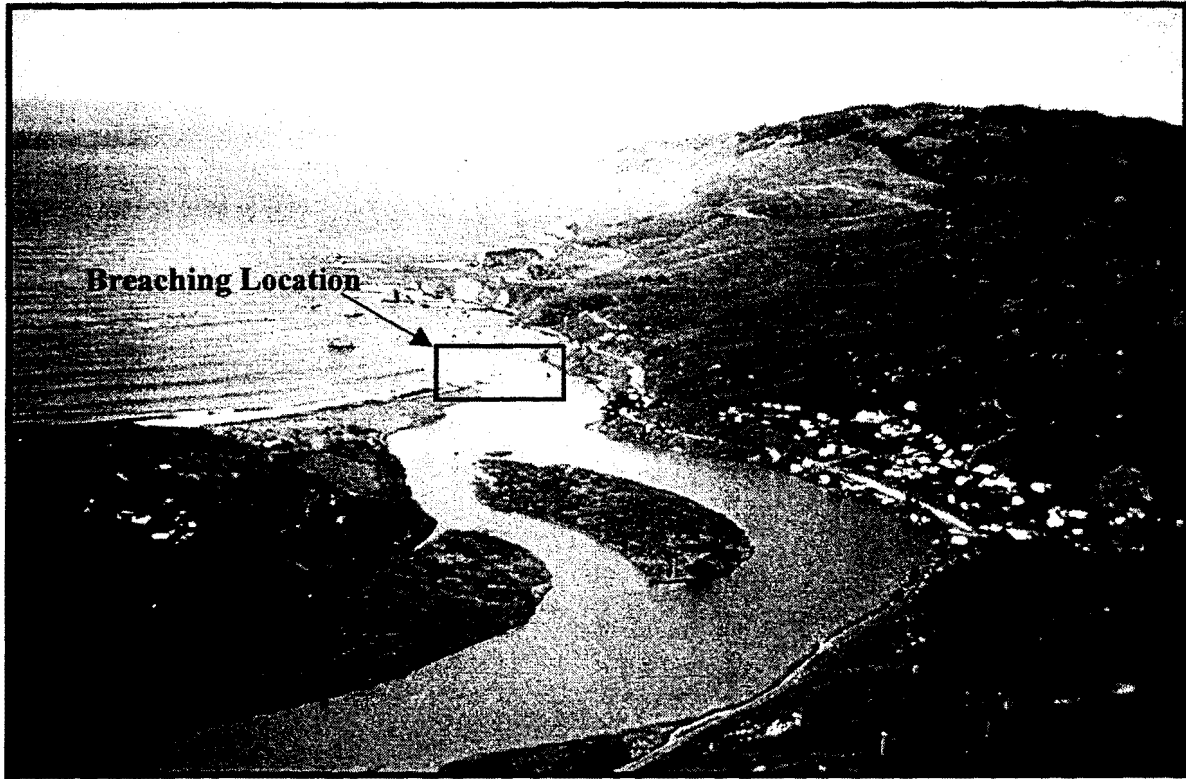
LOCATION MAP

NOT TO SCALE



# RUSSIAN RIVER ESTUARY BREACHING PROJECT SITE

ATTACHMENT  
A



Russian River Estuary looking northwest. The town of Jenner is on the right side of the photo.  
Penny Island is located in the center of the photo.



Mouth of the Russian River.  
View from Highway 1 overlook southwest towards Goat Rock State Beach.

EXHIBIT NO.	2
APPLICATION NO.	2-01-033
Sonoma County Water Agency	

EXHIBIT NO. 3

APPLICATION NO.

2-01-033

Sonoma County Water  
Agency



Russian River Estuary.

View from Goat Rock State Beach looking upstream towards Penny Island.



Russian River Estuary.

View from Highway 1 in Jenner. Looking downstream towards mouth of Estuary, Penny Island on left.



Mouth of the Russian River Estuary.

View to the north (Highway 1 is on the bluffs) from Goat Rock State Beach towards the typical breaching location.

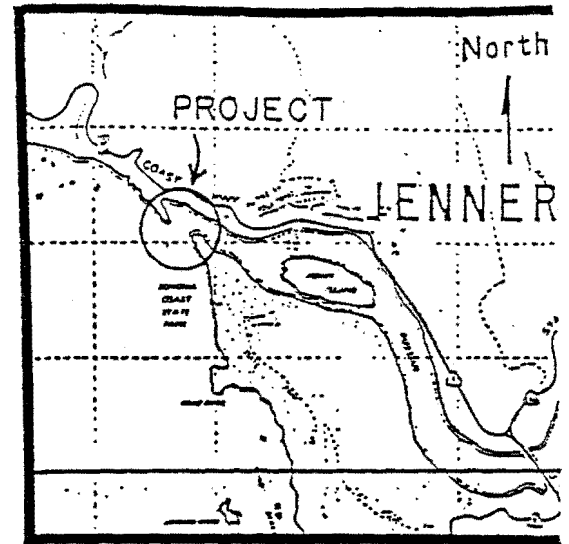


Goat Rock State Beach.

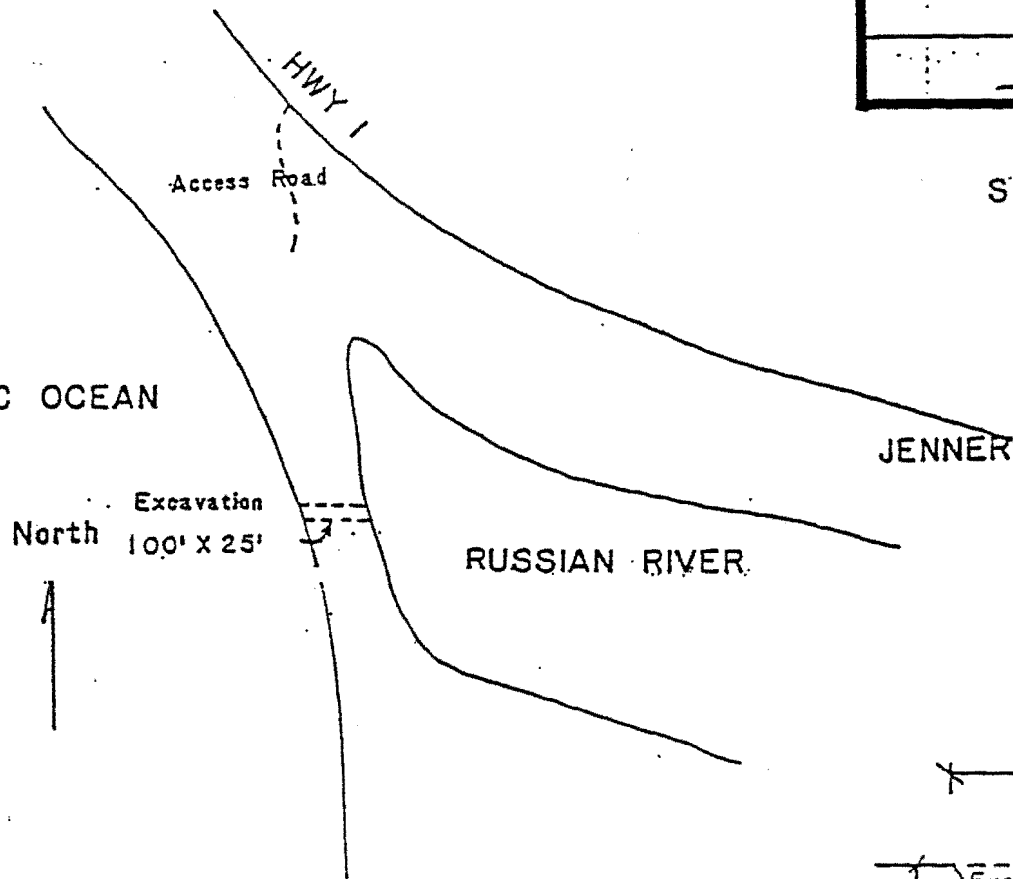
View from mouth of Russian River south towards Goat Rock.

EXHIBIT NO.	4
APPLICATION NO.	2-01-033
Sonoma County Water Agency	

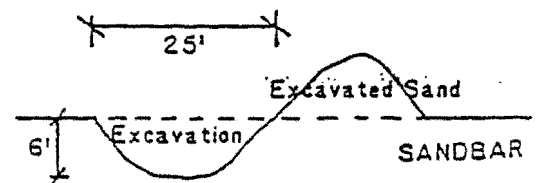




VICINITY MAP  
Scale: 1" = 4400'



PLAN VIEW  
No Scale



TYPICAL SECTION  
No Scale

EXHIBIT NO.	5
APPLICATION NO.	2-01-033
Sonoma County Water Agency	

PROPOSED SANDBAR EXCAVATION  
AT: JENNER IN: RUSSIAN RIVER  
COUNTY: SONOMA STATE: CALIFORNIA

## **ATTENTION**

**On the day of \_\_\_\_\_, the mouth of the Russian River will be opened by the Sonoma County Water Agency. This action is taken in compliance with permits from the U.S. Army Corps of Engineers, California Coastal Commission, California State Lands Commission, California Department of Parks and Recreation, and the California Department of Fish and Game to protect nearby areas from damage due to high water levels.**

**Care will be taken to avoid disturbing seals and sea lions in the area. For more information, please see the sign titled "Pinniped Protection During Breaching."**

**Visitors are cautioned to stay out of the construction area, and the river channel, and to remain on the same side of the construction area as the vehicle parking area they are using.**

**For further information, contact BOB OLLER, Sonoma County Water Agency, by telephone, 707-521-1845.**

**Thank you for your cooperation.**

<b>EXHIBIT NO. 6</b>
<b>APPLICATION NO. 2-01-033</b>
<b>Sonoma County Water Agency</b>

## PINNIPED PROTECTION DURING BREACHING



Harbor Seal (*Phoca vitulina*)



California Sea Lion (*Zalophus californianus*)

Two species of pinnipeds, the harbor seal and the California sea lion, inhabit the mouth of the Russian River. Harbor seals can number in the hundreds, while there are usually just a few sea lions present between December through June. These pinnipeds can be easily disturbed and will leave the shore, sometimes abandoning their pups for long periods of time.

The Sonoma County Water Agency is responsible for opening the mouth of the Russian River to enhance water quality and wildlife habitat in the Russian River Estuary, and to minimize flooding and property damage upstream. A study conducted during 1992-1993, and biological monitoring performed from 1996-2000, determined that water quality and wildlife habitat is enhanced in the Estuary if the mouth is breached when the water levels reach heights between 4.5-7 feet at the Jenner visitor center's gage. However, during the study, it was found that visitors watching the operation can disrupt the seals, causing them to leave the beach.

**Visitors are asked to please remain behind the flagged-off section of beach and to follow the safety instructions from Agency staff to minimize the disturbance to pinnipeds during the breaching operation.**

Thank you for doing your part to ensure a healthy pinniped colony will remain at Goat Rock State Beach for years to come.

EXHIBIT NO.	7
APPLICATION NO.	2-01-033
Sonoma County Water Agency	

Figure 2-1. Map of the Russian River Estuary, Showing Sampling Stations for 1999 Study.

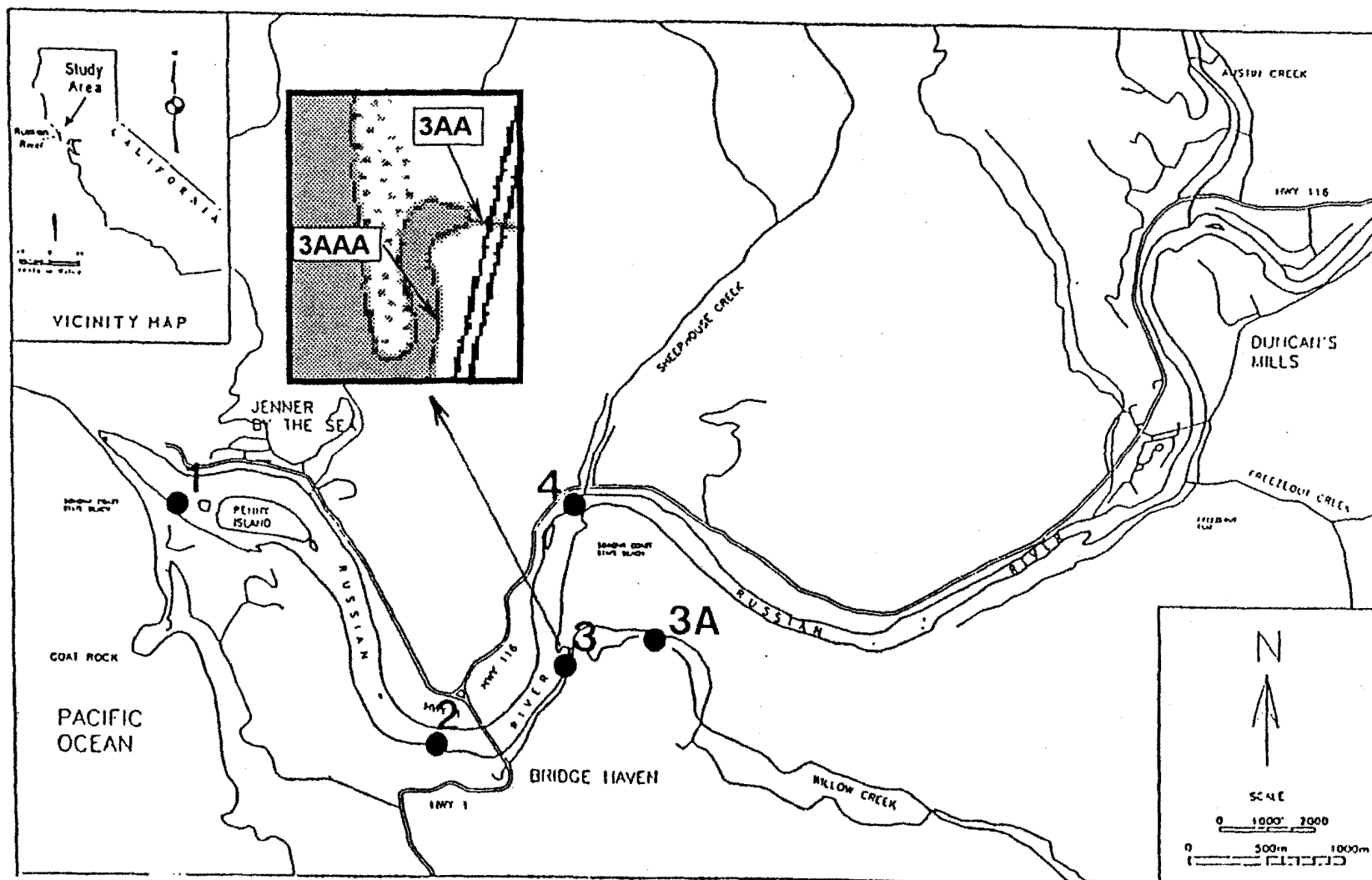


EXHIBIT NO. 8

APPLICATION NO.  
2-01-033

Sonoma County Water  
Agency