

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS  
ACTION AGENDA SUMMARY

DEPT: Environmental Resources

BOARD AGENDA # \*B-7

Urgent  Routine

AGENDA DATE June 24, 2008

CEO Concurs with Recommendation YES  NO   
(Information Attached)

4/5 Vote Required YES  NO

SUBJECT:

Authorization to Allow Access and Use of Property Near the Tuolumne River at the Geer Road Landfill

STAFF RECOMMENDATIONS:

Authorize the Director of the Department of Environmental Resources, or her designee, to allow access and use of property near the Tuolumne River at the Geer Road Landfill

FISCAL IMPACT:

The Tuolumne River Weir Project is funded jointly by the Turlock and Modesto Irrigation Districts. There will be no fiscal impact to the Department of Environmental Resources.

BOARD ACTION AS FOLLOWS:

No. 2008-465

On motion of Supervisor Monteith, Seconded by Supervisor Grover  
and approved by the following vote,

Ayes: Supervisors: O'Brien, Grover, Monteith, DeMartini and Chairman Mayfield

Noes: Supervisors: None

Excused or Absent: Supervisors: None

Abstaining: Supervisor: None

1) X Approved as recommended

2) \_\_\_\_\_ Denied

3) \_\_\_\_\_ Approved as amended

4) \_\_\_\_\_ Other:

MOTION:

ATTEST: Christine Ferraro  
CHRISTINE FERRARO TALLMAN, Clerk

File No.

DISCUSSION:

The Stanislaus County Department of Environmental Resources was recently contacted by FISHBIO Environmental, LLC (FISHBIO); a firm that is managing the Tuolumne River Weir Project for the Turlock and Modesto Irrigation Districts. Specifically, this project is designed to monitor upstream migration of salmonids using a fish counting weir. A similar fish counting device has successfully been operating in the Stanislaus River since 2003.

The project objectives include:

1. Determining the total Chinook salmon and steelhead escapement in the Tuolumne River through direct counts;
2. Evaluating the effects of environmental factors on migration timing of fall-run Chinook salmon; and
3. Validating traditional carcass survey estimates by comparing the estimates of population size, run timing and life history composition obtained from sampling with the weir to that from sampling spawner carcasses.

The project will be conducted annually for a minimum of five (5) field seasons beginning in September 2008 and continuing through June 2013, with the actual sampling taking place between September 1 and December 31<sup>st</sup> each year. Sampling can be extended for additional months when funding is available.

The “footprint” of the project is described as follows: “Within the Tuolumne River at river mile 24.5 adjacent to Assessor’s Parcel No. 009-029-015” and consisting of, “125 feet by 30 feet in the river channel and 50 by 50 feet on the adjacent shoreline.” Given that the project footprint and an access road are located within or on Stanislaus County property, FISHBIO is requesting permission to access the project site from Geer Road Landfill. In addition, they would like to install the following: 1) structures that will remain in place throughout the duration of the project (i.e., a lock box, solar panels and substrate rail); and 2) structures that will be seasonally installed and removed (i.e., resistance board panels, liveboxes, rigid weir panels and bulkheads). Also requested was access to electricity which is not available. Instead, solar power will be utilized.

The project as described indicates that normal activities will not be conducted on or near the on-site access road, but will be conducted at the river’s edge and within the river channel. The on-site road will typically only be used for passenger vehicle access and parking. Heavy equipment will not be used to install the weir, but a flatbed trailer may be pulled to the site twice each sampling season to transport weir components to and from the project that are too long to fit in a pick-up truck.

Department staff feel that this project would not interfere with activities taking place at the site, but since it is a closed landfill, staff would work cooperatively with FISHBIO to arrange site access. The County cannot, however, guarantee the safety and security of the structures/equipment that are installed for the project and FISHBIO is aware of this and accepts

Authorization to Allow Access and Use of Property Near the Tuolumne River at the Geer Road  
Landfill  
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full responsibility for same. For the Board's reference, included as Attachment "A" is a copy of the request from FISHBIO.

**POLICY ISSUE:**

The Board of Supervisors should determine if allowing access and use of property near the Tuolumne River at the Geer Road Landfill is consistent with the Board's priority of effective partnerships.

**STAFFING IMPACT:**

There is no staffing impact at this time.

Jim Inman  
Wildlife Biologist  
jiminman@fishbio.com

March 20, 2008

Sonya Harrigfeld  
Stanislaus County Department of Parks and Recreation  
3800 Cornucopia Way, Suite C  
Modesto, CA 95358-9492

**Re: Request permission to access and use property near the Tuolumne River, Stanislaus County (APN 009-029-015).**

Dear Ms. Harrigfeld,

At your request, I have prepared a project description for the proposed Tuolumne River Weir Project (Project) which is attached in Attachment 1. The Project is designed to monitor upstream migration of salmonids using a fish counting weir (i.e., portable resistance board weir) similar to one that we have successfully operated in the Stanislaus River for the past several years. The proposed Project location is within the Tuolumne River at river mile 24.5 adjacent to parcel no. 009-029-015. The Project footprint is 125 ft by 30 ft in the river channel and 50 by 50 on adjacent shoreline.

It is anticipated that the Project will be conducted annually for a minimum of five field seasons beginning in September of 2008 (September 2008– June 2013). Monitoring will typically be conducted from September 1 through December 31, but may continue to January 31 if fish are still migrating at the end of December. Sampling beyond January is not likely to occur; however, extended sampling through June 30 will be conducted if additional funding comes available.

FISHBIO Environmental, LLC (FISHBIO) will be managing all aspects of the Project (i.e., weir design, installation, and operation) on behalf of Turlock Irrigation District and Modesto Irrigation District (TID & MID). As with all our research projects, we will acquire all necessary federal, state and local permits prior to initiating the Project.

Normal Project activities will not be conducted on or near the access road, but will be conducted at the river's edge and within the river channel. The road will only be used for passenger vehicle access and parking. Heavy equipment will not be used to install the weir, but a flatbed trailer may be pulled to the site twice each sampling season (i.e., once when the weir is installed and once when the weir is removed) to transport weir components that are too long to fit in the back of a pickup truck.

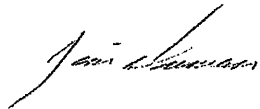
Since the Project footprint and road access is located within Stanislaus County property, we are requesting permission from Stanislaus County to access the Project site from Geer Road; to install some structures that will remain in place throughout the duration of the Project (i.e., Lock box, solar panels and substrate rail); to install some structures that will be seasonally installed

ATTACHMENT "A"

and removed (i.e., Resistance board panels, liveboxes, rigid weir panels, bulkheads); and to access electricity if available at the site.

Thank you for your consideration. If you have any questions, please contact me at 209-988-2314. We greatly appreciate your cooperation and hope to hear back from you soon.

Thank you,



Jim Inman  
Wildlife Biologist  
670 Hi Tech PKWY Suite A  
Oakdale, CA 95361

Enclosure

## ATTACHMENT 1: TUOLUMNE RIVER WEIR PROJECT

### **Project Purpose:**

The Tuolumne River Weir Project (Project) is designed to monitor upstream migration of salmonids using a fish counting weir (i.e., portable resistance board weir) similar to one that has been successfully operated in the Stanislaus River since 2003. The Project will be funded jointly by Turlock Irrigation District and Modesto Irrigation District. Project objectives include:

- Determine the total Chinook salmon and steelhead escapement in the Tuolumne River through direct counts.
- Evaluate the effects of environmental factors on migration timing of fall-run Chinook salmon.
- Validate traditional carcass survey estimates by comparing the estimates of population size, run timing, and life-history composition obtained from sampling with the weir to that from sampling spawner carcasses.

Below are brief descriptions of the techniques and methods associated with operation of the Tuolumne River weir. Similar to the Stanislaus River Weir Project, we will employ two different monitoring methods to enumerate fish passage and collect biological data:

1. **Electronic Monitoring.** Fish monitoring during the majority of the study period will be primarily accomplished with a Vaki RiverWatcher infrared digital recording system (Vaki System). The Vaki System is a passive monitoring method that will allow us to collect needed information without capturing and handling fish (see Vaki RiverWatcher Section on page 6). The Vaki System will be operated continuously during each sampling season (see Project Duration and Timing Section on page 4).

2. **Livebox Monitoring.** During limited periods, fish will be temporarily trapped in a livebox (see Livebox Section on page 6) to validate data collected by the Vaki system, to collect data during conditions which preclude effective operation of the Vaki system (e.g., turbidity >3 NTU), and/or to collect scale samples from salmonids.

### **Proposed Location:**

The proposed weir location is at river mile 24.5 adjacent to parcel no. 009-029-015 (Figure 1). The Project footprint is 125 ft by 30 ft in the river channel and 50 ft by 50 ft on adjacent shoreline. Access to the site is available via Geer Road or Triangle Ranch Road.

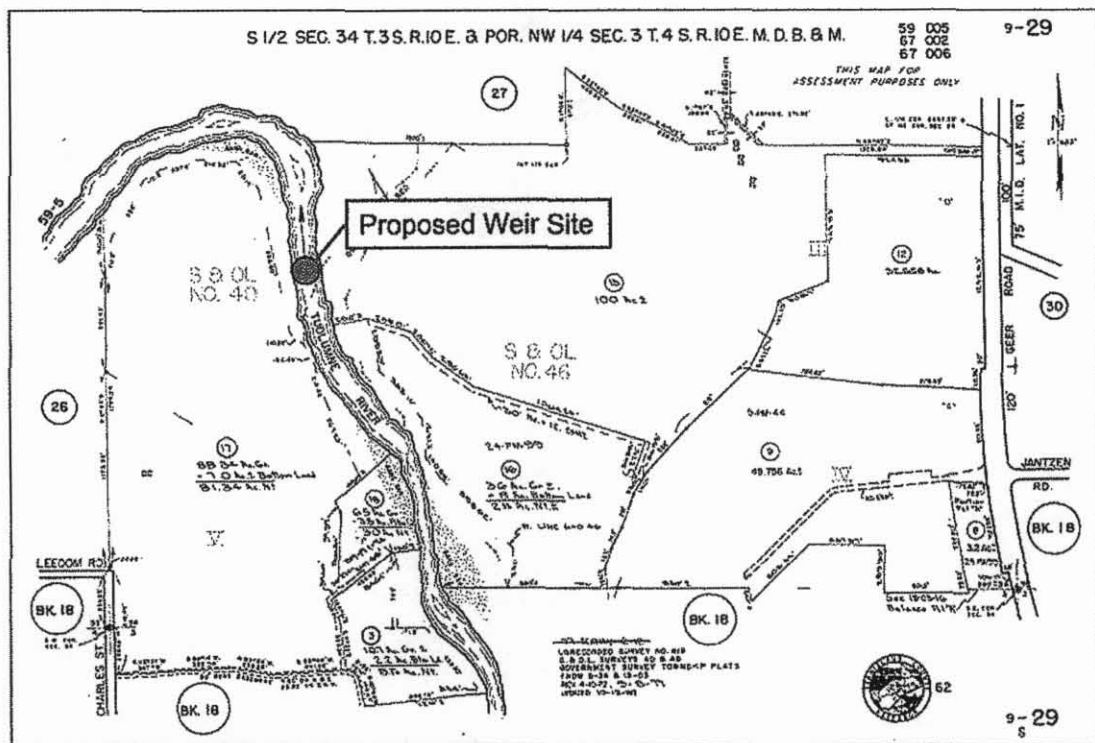


Figure 1. Proposed weir site adjacent to county property parcel APN 009-029-015.

#### Project Duration:

The Project will be conducted annually for a minimum of five field seasons beginning in September of 2008 (September 2008– June 2013). Monitoring will typically be conducted from September 1 through December 31, but may continue to January 31 if fish are still migrating at the end of December. Sampling beyond January is not likely to occur; however, extended sampling through June 30 will be conducted if additional funding comes available. Removable weir components will be installed in early September and will be removed within two weeks of the end of sampling, or as soon as possible thereafter (dependent on the safety of existing flow conditions at the time).

#### Project Components:

A resistance board weir consists primarily of an array of rectangular panels made of evenly spaced PVC pickets aligned parallel to the direction of flow (Figures 2 and 3). The upstream end of each panel is hinged to a rail that is anchored to the substrate. The downstream end of the panel is lifted above the surface by a resistance board that planes upward in flowing water. When all components are installed, the resulting barrier inhibits fish from migrating upstream, yet allows water to pass. A passing chute on one of the panels guides fish into a livebox where they will be counted as they migrate upstream.

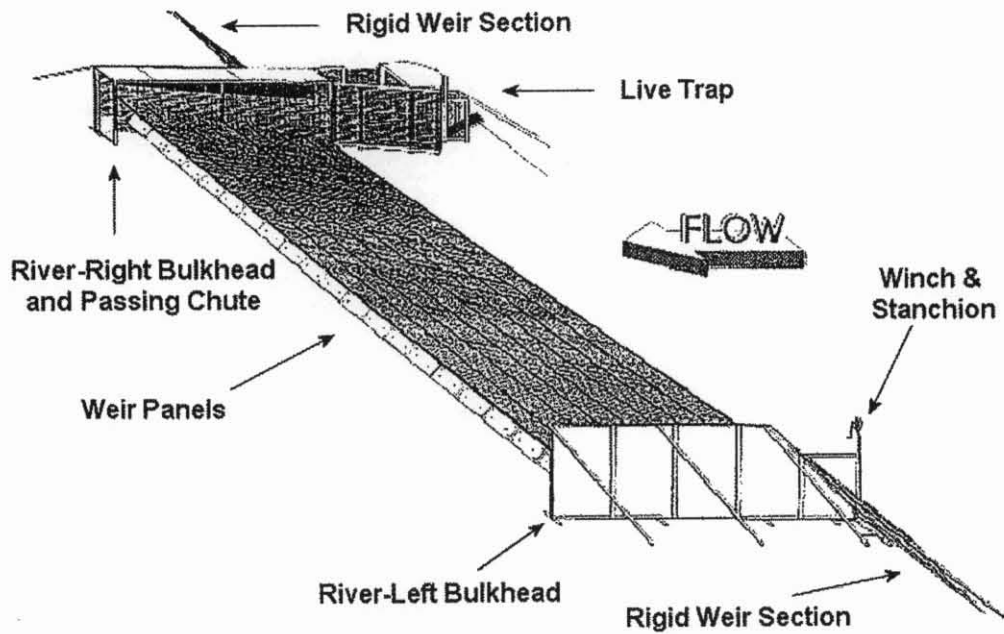


Figure 2. Example of a resistance board weir used by the USFWS in Alaska (Diagram reproduced from Tobin 1994).

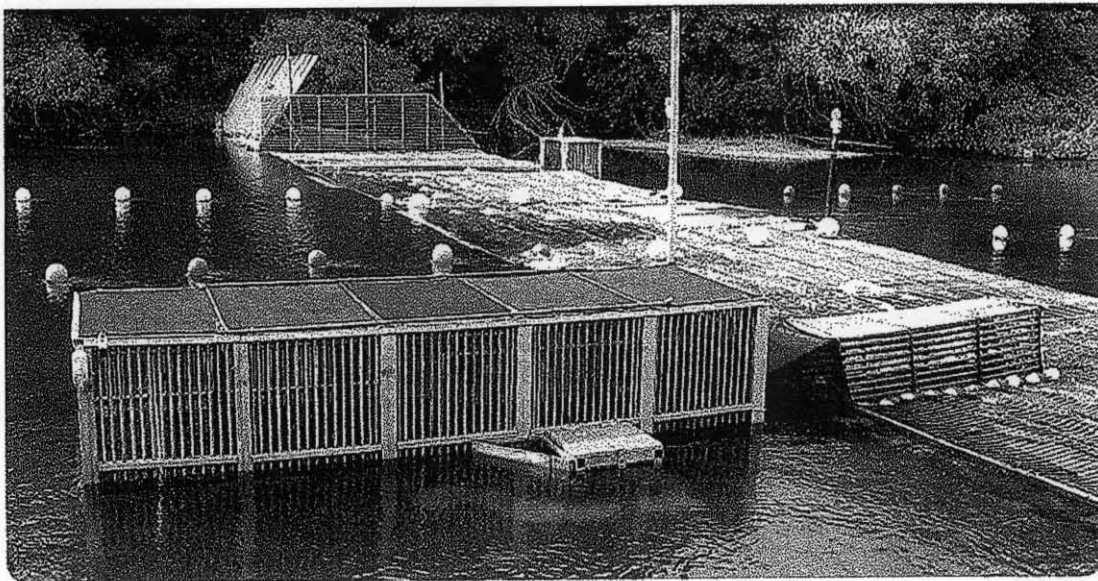


Figure 3. Stanislaus River Weir, Riverbank, CA.

*Resistance panels*

The weir consists of an array of resistance panels that span the majority of the river channel. Each panel consists of PVC conduit pickets spaced 2-5/8 inches on center held



together by ½-inch UHMW polyethylene (high density plastic) stringers. The upstream side is attached to a cable and rail system (i.e., substrate rail) that is anchored to the substrate floor and the downstream end is lifted above the water surface by a 2' x 3' resistance board that planes upward in flowing water. The substrate rail is one of three structures left in place year-round.

In addition to the panels mentioned above, two types of modified resistance panels will also be constructed. The first is a boat passage panel that will allow passage of watercraft from downstream of the weir. Any watercraft can pass the weir from upstream at any section of the weir and jet motors can pass from downstream at any section. However, outboard propeller boats can only pass the weir over the modified boat passage panels. Each weir will have a 10' x 10' boat passage section that consists of PVC pickets aligned perpendicular to both the flow and adjacent weir pickets, and are tied together with three stringers in such a way that the downstream edge of this section is elevated slightly out of the water in its resting position and automatically submerges when approached by a watercraft from downstream of the weir.

The second type of modified resistance panel is a passing chute designed to move with the weir panels to minimize fish delays in locating the opening to the upstream livebox. The "floating" design enables the fish to find the livebox opening regardless of their approach, rather than having to find the correct panel, which means that fish swimming laterally from the shoreline do not have to fall back downstream and start again in order to find the correct panel. The passage chute is directly attached to one of the weir panels and measures 28" high x 28" wide x 90" long. The chute is open underneath where fish can enter, and, with the exception of the upstream end, which opens to a net extending into the livebox, is closed on the remaining sides with PVC pickets. Fish entering the passage chute exit through the attached fyke net extension and into the livebox.

#### *Livebox*

The livebox will measure 7' wide x 10' long x 5' high and will be able to accommodate the Vaki RiverWatcher. The frame will be constructed of aluminum with vertical pickets made from 1-inch galvanized steel conduit. The livebox will include a crowder gate as well as a removable top.

#### *Vaki RiverWatcher*

The Vaki RiverWatcher system is comprised of three components; a computer that is housed within the computer lock box on shore above the high water mark, an infrared scanner located in the river within the livebox, and a camera also located in the river within the livebox.

#### *Rigid weir*

Rigid weir panels extend from the bank into the river channel where water velocity is near zero. Each section consists of 3' x 10' panels of 1-inch galvanized steel welded to angle iron and supported by A-frames. The A-frames are constructed from aluminum square tubing and angle iron.

*Bulkhead*

A bulkhead serves as an interface between the rigid and resistance board panels. It consists of a welded aluminum frame with PVC conduit pickets spaced 2-5/8" apart.

*Solar Panels*

If an electrical source is not available, two solar panels will be mounted atop a 20' pole. The pole will be mounted in a 3' x 3' cement footing located near the computer lock box and the solar panels will measure 60" x 52". The solar panel pole and frame is left in place year-round.

*Computer Lock Box*

On the east river bank, a lock box (42" x 60" x 82") will be mounted to a cement pad (46" x 64") above the high water mark. The lock box will house the Vaki RiverWatcher computer and bank of batteries if solar is used. ". The computer lock box is left in place year-round.