STATE OF CALIFORNIA THE RESOURCES AGENCY
**DEPARTMENT OF FISH AND GAME**
BAY DELTA REGION
(707) 944-5520
*Mailing address:*
POST OFFICE BOX 47
YOUNTVILLE CALIFORNIA 94599
*Street address:*
7329 SILVERADO TRAIL
NAPA CALIFORNIA 94558



September 4, 2008

**Notification Number: 1600-2005-0735-3**

Tom Zigterman
Stanford University
327 Bonair Siding Road
Stanford, CA 94503

# 1602 LAKE AND STREAMBED ALTERATION AGREEMENT

This agreement is issued by the Department of Fish and Game pursuant to Division 2, Chapter 6 of the California Fish and Game Code:

**WHEREAS**, the Applicant Tom Zigterman, Stanford University, submitted a signed NOTIFICATION proposing to substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed or lake of the following water: Los Trancos, San Francisquito, and Corte Madera creeks, located in various Sections of Township 6 south and Range 3 West, in the County of Santa Clara and San Mateo counties, State of California; and

**WHEREAS**, the Department has determined that such operations may substantially adversely affect existing fish and wildlife resources including water quality, hydrology, aquatic or terrestrial plant or animal species; and

**WHEREAS**, the project has undergone the appropriate review under the California Environmental Quality Act; and

**WHEREAS**, the Applicant shall undertake the project as proposed in the signed PROJECT DESCRIPTION and PROJECT CONDITIONS (attached). If the Applicant changes the project from that described in the PROJECT DESCRIPTION and does not include the PROJECT CONDITIONS, this agreement is no longer valid; and

**WHEREAS**, the agreement shall expire on December 31, 2027; with the work to occur between June 15 and October 15 unless extended; and

**WHEREAS**, nothing in this agreement authorizes the Applicant to trespass on any land or property, nor does it relieve the Applicant of the responsibility for compliance with applicable Federal, State, or local laws or ordinances. Placement, or removal, of any material below the level of ordinary high water may come under the jurisdiction of the U. S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act;

**THEREFORE**, the Applicant may proceed with the project as described in the PROJECT DESCRIPTION and PROJECT CONDITIONS. A copy of this agreement, with attached PROJECT DESCRIPTION and PROJECT CONDITIONS, shall be provided to contractors and subcontractors and shall be in their possession at the work site.

Failure to comply with all conditions of this agreement may result in legal action.

This agreement is approved by:

Scott Wilson FOR
Charles Armor
Regional Manager
Bay Delta Region

cc: Johnston, Atkinson, Leicester
Lieutenant Nores
Lieutenant Kelly

RECEIVED 9/4/08 -TWZ

State of California - The Resources Agency ARNOLD SCHWARZENEGGER, Governor

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**Notification Number: 1600-2005-0735-3**
**San Francisquito and Los Trancos Creeks and Felt Reservoir**
**Santa Clara and San Mateo Counties**

**Tom Zigterman**
**Stanford University**
**327 Bonair Siding Road**
**Stanford, CA 94503**

## PROJECT DESCRIPTION

### General Project Description

This Agreement covers proposed activities and operations of Stanford University ("Stanford") as described below and in the project description submitted by Stanford January 5, 2007, attached hereto as Attachment 9 ("Stanford's Project Description"). The Department of Fish and Game ("Department") and Stanford agree that this Agreement applies to the project as set forth herein,[1] and that in the event that the project description below and Stanford's Project Description conflict, the project description below shall govern.

Stanford University is proposing to modify its existing water diversion and storage facilities at three locations: Felt Lake Reservoir, the diversion facility on Los Trancos Creek, and the diversion facility on San Francisquito Creek. The purpose of the proposed work is threefold: 1) to provide increased bypass flows in San Francisquito and Los Trancos Creeks; 2) to restore water storage capacity in Felt Lake Reservoir by removing 150,000 cubic yards of sediment; and 3) to increase the efficiency of Stanford's existing diversion facilities on Los Trancos and San Francisquito Creeks.

Stanford claims appropriative and riparian water rights to divert water from Los Trancos, San Francisquito and Corte Madera Creeks, as more fully described in Attachment 2, "Water Right Summary." Stanford uses water from these creeks primarily to irrigate the campus golf course, athletic fields, and campus landscaping, as well as for environmental, recreational, aesthetic and groundwater recharge purposes on campus.

[1] Stanford is not in agreement as to the biological need or justification for every measure set forth in this agreement; however, Stanford hereby agrees to implement and carry out all of the measures contained herein for purposes of carrying out the Project, with the understanding and on the condition that Stanford does not waive or concede any rights or positions with respect to the biological need and justification for the measures agreed to herein.

According to Stanford, it may also exercise its water rights to supply domestic and municipal water to the campus and surrounding communities in an emergency.

San Francisquito Creek is part of a local watershed that originates above Searsville Lake and drains a cumulative watershed of about 45 square miles. The creek is approximately 12 miles long and drains into San Francisco Bay. Los Trancos Creek is a major tributary to San Francisquito Creek, and merges with that creek just downstream of Interstate 280. Stanford's diversion facilities in relation to the local watersheds and area are shown in Attachment 3, "Lake Water Sources."

Los Trancos and San Francisquito Creeks both support populations of steelhead and California red-legged frog, both of which are listed under the Endangered Species Act as threatened, and other native aquatic species.

**Felt Lake:** Felt Lake is an artificial water storage reservoir fed by the water diversion from Los Trancos Creek and diffuse surface runoff from the surrounding area. The surrounding watershed is comprised mainly of grasslands, and the reservoir itself contains open water, fresh water emergent wetlands, adjacent seasonal wetlands, and nearby isolated seasonal wetlands. The surface area of the lake is just over 42 acres. The lake's capacity is currently approximately 937 acre feet ("af").

The Felt Lake project includes dredging Felt Lake Reservoir to its 1929 storage capability of 1,050 af to accommodate increased winter time water diversion. To dredge the reservoir, Stanford will need to drain it during the summer after its stored volume has been depleted to satisfy summer irrigation demand. The draining will be monitored by fisheries biologists who will respond in the event that any sensitive native species are encountered. After the lake is drained, approximately 150,000 cubic yards of silt and sediment will be excavated laterally below its high water level, using a clean scoop and lift approach. The excavated material will then be deposited in the upland borrow pits that were used originally to construct Felt Lake's dam, and in adjacent areas above the area covered by water at its high water (spillway) level.

Dredging activities will affect 21.20 acres of open water and 11.12 acres of fringe wetlands on the margins of the reservoir. All impacts associated with dredging will be temporary and will occur only after the reservoir has been drained. Stanford will mitigate for the loss of wetlands permanently destroyed by the placement of dredge fill in the borrow pits (.19 acres) nearby at a 2:1 replacement ratio. All other wetlands affected by the dredging are expected to naturally return within one to two seasons.

Future maintenance efforts at Felt Lake will include periodic sediment removal using clean scoop and lift methods, minor dam repairs, rodent control, and reshaping work at the flume entry and spillway areas. Those efforts will be conducted after the water levels have receded. Disturbed areas will be revegetated in accordance with the revegetation plan approved for the Felt Lake project.

**Los Trancos Creek Diversion.** The Los Trancos diversion dam and flume were originally constructed in the early 1870s. These facilities deliver water to campus lands

through Felt Lake Reservoir. Stanford's appropriative water rights authorize Stanford to divert water from Los Trancos Creek up to the flume's 40 cubic feet per second ("cfs") capacity. Prior to 1995, flows in excess of diversion would spill over the diversion dam and its flashboards, or would be passed through the radial gate at the diversion structure.

In 1995, Stanford constructed a fish screen structure, a fish ladder, and a bypass channel at the diversion to allow fish passage at the diversion facility and to provide increased flows past the facility. The ladder was designed by the Department and the Department approved the fish screen and bypass channel. Since that time, flows to the diversion flume, ladder, and bypass have been controlled by the placement of flashboards in various configurations, depending on the creek's flow level. The fish ladder only operates effectively at a flow rate above 3 cfs, which has limited fish passage through the ladder to periods when flows are above 3 cfs.

The installation of the fish passage and diversion system components complicates and reduces the efficiency of Stanford's diversion operations. The configuration of the bypass channel, diversion flume, fish screen, and the ladder resulted in inefficient diversions during medium and high creek flows because streamflow does not back up properly against the screen and flume entrance. This has resulted in streamflow bypassing the facility rather than being diverted into the flume. Frequent clogging of the screen further reduces the ability to divert water into the flume. These design and operational problems have reduced Stanford's ability to divert during higher flow periods. In response, Stanford has attempted to maximize diversions during the low-flow periods from the December 1st through April 30th season of diversion. This is the system that is currently in place.

The new fishway structure is intended to accommodate fish passage over a much broader range of flows than the existing facility. In addition to increasing bypass flows in the lower flow season, the Los Trancos Creek project is designed to improve the efficiency and performance of the fish passage components by consolidating the bypass function with the fish ladder into one structure. To do so, Stanford intends to modify the design of the fish ladder and fish screen to allow it to more efficiently divert up to 40 cfs of water during high flow periods, while minimizing the water supply impacts that result from increased bypass during low-flow periods.

The Preliminary Los Trancos Creek Fish Ladder Facility Proposed Modification Site Plan sheet in Attachment 4-C is based on the preliminary design report by Wood Rodgers attached hereto as Attachment 6. The proposed modifications include:

- removing from service the existing fish screen cleaning system and fish ladder;
- grout-filling and abandoning in place the existing bypass channel;
- installing a new pool-and-weir fishway that will operate continuously, except during short maintenance periods in the summer);
- installing a new diversion control structure;
- modifying the fish screen; and

- installing a local control station.

The reconfiguration of the facility and added components, including the control structure, will back the water up higher against the screens, improving the efficiency of the diversion and reduce debris clogging of the screens. The existing dam, radial gate, flume, and access structure will remain in place. Flow measurement devices will be incorporated in the diversion facility to facilitate controls and operation. The physical and operational modifications to the Los Trancos Creek facility will rely on the use of modern electro-mechanical equipment and automated control mechanisms to regulate diversions and bypass flows according to a required diversion and bypass operating plan described in Attachment 1-A.

The new fishway structure has been designed to comply with current Department and National Marine Fisheries Service ("NMFS") criteria for anadromous fish passage, and will be installed into the existing berm between the creek and flume. The fish screen modifications and proposed screen clearing mechanism will also conform to current Department and NMFS criteria. The new diversion control structure, fishway slide gate, and automated control mechanisms will be installed and configured such that the diverted flow and bypass flow can be controlled as a function of total creek flow. Creek flow can physically be routed either through the new fishway, through the existing radial gate spillway structure, over the existing dam, or diverted through the modified fish screen structure and into the flume to Felt Lake. The minimum bypass flows in this Agreement will be measured as the flow below the facility, which shall be comprised of the flows passed through the fish ladder and flows or seepage through the radial gate. Stanford will ensure that the available flow is routed to and passed through the fish ladder (as opposed to the radial gate) to ensure passage and attraction flows through the fish ladder facility for steelhead of all life stages, consistent with the operational design of the fish ladder facility.

The three pages of the Wood Rodgers design for the Los Trancos facility (Attachments 4-A, 4-B, and 4-C) contain preliminary drawings for construction phasing/staging, creek diversion, and other provisions to avoid and minimize construction impacts. Fisheries biologists will be involved prior to and during any work to ensure that steelhead and other native species are not present in the work area, and will not be adversely affected during construction activities.

Stanford reported that diversions in the five-year period from 1999 to 2004 averaged 592 af per year at this facility. The proposed modifications to the facility will restore Stanford's ability to maximize diversion rates during periods of high flow (up to 40 cfs minus the amount to be picked up at San Francisquito Creek under Water Rights License 1723). Overall diversion amounts at the modified facility, had it been in place during the 1999 to 2004 period, would have been reduced to an average 490 af per year, to allow the additional bypass flows for instream resources immediately below the facility.

Construction for the Los Trancos Creek project will result in temporary impacts to 0.005 acre, and permanent impacts to 0.017 acre of jurisdictional waters/wetlands. The total length of affected channel is approximately 109 linear feet at the Los Trancos Diversion Structure. All temporary disturbance areas will be restored to equal to, or better than pre-

project conditions. Disturbed banks will be planted with native riparian vegetation. Mitigation for permanent impacts includes the restoration and stabilization of a 0.013-acre failing bank in the project area. All riparian trees that are removed will be mitigated at a 3:1 ratio.

Typically, ladder access for sediment removal or repairs will be accomplished by the redirection of flow through the radial gate, and removal of the cover grates and opening of clean-out ports in the bottom of the baffles, or hand clearing of accumulated sediment and other materials. Following large storms, accumulated gravel in the flume/ladder entry area will be removed as necessary by following procedures developed in consultation with the Department and NMFS. Any necessary concrete repairs will be made in a manner ensuring that fish are not exposed to uncured concrete. Future maintenance efforts will include periodic gravel removal from the ladder, inspections and maintenance of the gates and brush mechanisms and screens, and repairs of the concrete structures.

The diversion and bypass operation for the modified Los Trancos Creek Diversion Facility is described in detail in Attachment 1-A.

**San Francisquito Creek Diversion:** The current San Francisquito Creek Pump Station is located in San Francisquito Creek, just over one mile below the confluence of Los Trancos and San Francisquito Creeks, and was constructed in 1998. This new pump station was constructed with two pairs of pumps: one pair for the Lagunita diversion, and a second pair ("Felt pumps") to divert water: 1) that was allowed to bypass the Los Trancos Creek facility as a result of installation of the Los Trancos Creek fish ladder in 1995; and 2) to exercise other water rights claimed by Stanford described in Attachment 2. The 1998 pump station replaced a pump station that had been previously used exclusively to divert water to Lake Lagunita. The four pumps divert water collected in an infiltration gallery intake. The infiltration gallery did not function properly until 2004, as a result of sediment deposits along the inside of the Creek bend, which is located atop the infiltration gallery.

The two Lake Lagunita pumps lift water from San Francisquito Creek to the Lake Lagunita flume near the top of bank, which extends across Junipero Serra Boulevard through the campus golf course and across Campus Drive West to Lake Lagunita. The Lake Lagunita pumps are physically and hydraulically not able to pump to Felt Lake.

The two Felt Lake pumps divert water from San Francisquito Creek to a pipeline that connects Felt Lake to the lake water distribution system. The Felt Lake pumps are not connected directly to the Lake Lagunita flume; however, water from Felt Lake and its pipeline to the lake water system can be conveyed to Lake Lagunita.

Each pair of pumps in the current station has a capacity of 4 cfs. The pumps operate one pair at a time, but not simultaneously, due to limitations of the intake system and the usually low creek flow rate in the spring when the Lake Lagunita diversions are generally needed. Currently, the maximum instantaneous rate of diversion for this facility does not exceed 4 cfs. Stanford typically operates the pumps from December 1st through June 30th.

As part of the San Francisquito Creek project, Stanford will modify the San Francisquito Creek Pump Station to facilitate capture of bypassed flows from the modified Los Trancos Creek diversion facility, and additional water under other claimed water rights. The capacity of the Felt Lake pumps will be increased from their current 4 cfs capacity to an instantaneous diversion capacity of 8 cfs. This 8 cfs diversion rate is the maximum rate that can be accommodated in the existing pipeline between the station and Felt Lake. The diversion capacity of the Lake Lagunita pumps and the intake capacity of the infiltration gallery will not change. Although Stanford will screen for a 12 cfs surface diversion, Stanford has agreed to limit the maximum total instantaneous diversion rate at this facility to 8 cfs for purposes of this Agreement. The bypass and diversion operation plan is described in Attachment 1-B.

A preliminary drawing showing the proposed modifications to this facility is in Attachment 5. The proposed modifications, which are subject to review and approval by the Department, include:

- the addition of a new Felt Lake pump/motor to increase Felt pumping capacity to a total of 8 cfs;
- the upsizing of the entire electrical service and system to serve the new larger pump/motor;
- the addition of a 12 cfs capacity surface intake system, properly screened, in order to provide additional and more reliable intake capacity to the pumps;
- the installation of rock spurs upstream of the pump station to guide and stabilize creek flow to the intake gallery and fish screens where it was prior to the construction of the current pump station;
- raising of the pump vault lids above the low flow water level for maintenance access; and
- the installation of stream flow measuring devices so diversions and bypass flows can be regulated with respect to flow.

The flow of San Francisquito Creek will be redirected around the work area to allow construction of the above-described improvements. All creek construction work will take place during low flow summer months when fish will be easier to detect and capture, if necessary. Work will be performed under the direction of qualified biologists to avoid adverse effects to fish and wildlife resources in the work area. As with the Los Trancos work, fisheries biologists will be involved prior to and during any work to ensure that steelhead and other native species are not present in the work area, and will not be adversely affected during construction activities. The work area will be isolated and dewatered using a coffer dam and bypass pipe, and fish or other species will be removed following the protocol developed in consultation with the Department and NMFS. Stanford shall submit and have approved by the Department and NMFS detailed design drawings and specifications.

The bypass flow and diversion operations plan for the proposed San Francisquito Creek project (see Attachment 1-B) is intended to improve the bypass flow regime in San Francisquito Creek to provide improved flow conditions for steelhead passage and habitat. As such, bypass flow terms were developed to improve migration by reducing diversions at identified key flow ranges. In these flow ranges, increased bypass flows will facilitate passage through downstream segments of the creek that have difficult passage conditions. If at a later date modifications at downstream barriers occur that would provide fish passage at those locations at reduced flows, Stanford may prepare a new bypass flow plan and submit it to the Department for review and approval as part of a request to amend this Agreement. For example, Stanford could propose changes to the protective bypass flow terms found in Attachment 1-B if there were a modification of both the Transect 3 and the Bonde Weir barriers that allowed successful and efficient passage of adult steelhead at Transect 3 at flows between 16 and 40 cfs and at the Bonde Weir at flows between 16 cfs and 100 cfs.

The San Francisquito Creek project will result in 0.012 acre of permanent fill and 0.046 acre of temporary impact within San Francisquito Creek. All temporarily disturbed bed and bank will be restored to better than pre-project conditions with native riparian plantings. Permanent impacts at San Francisquito Creek Pump Station will be mitigated through wetland creation and riparian restoration and enhancement along the San Francisquito Creek corridor, to the west of Interstate 280. All riparian trees that are removed will be mitigated at a 3:1 ratio. All work will conform to the mitigation plans prepared by Stanford and approved by the Department.

In addition to typical water demands, diversion is often needed for Lake Lagunita to sustain water levels for the benefit of California tiger salamanders ("CTS"), a federally-protected species and state Species of Special Concern. During the wet winter months, CTS migrate to Lake Lagunita and lay their eggs, which then rely on sustained water level in Lake Lagunita for survival. Because Lake Lagunita percolates its water quickly, water levels must be replenished, either by storm runoff or artificially from creek diversions. Stanford will operate the pump station through June 30th to supply water to Lake Lagunita as described in Attachment 1-B. If creek flows are inadequate to meet water demands at Lake Lagunita for CTS, Stanford will rely on water from other sources to meet this need.

For the San Francisquito Creek Pump Station Diversion Facility, maintenance efforts will include periodic inspection, repair and replacement of the pumps, screens, flow measurement devices, and concrete structures, gravel removal from the vaults, and possible adjustment of the bendway weirs. The raising of the pump vault covers above the low creek water level, as part of the project, will facilitate access to the pumps and vaults without creek entry. Also, slots and boards inside the screens will enable them to be accessed without creek water entering the vaults.

**Searsville Dam and Reservoir:** Stanford also diverts water at Searsville Dam, approximately 1,000 feet above the confluence of San Francisquito Creek and Bear Gulch Creek. Searsville Dam was constructed in 1890 and has been in operation since that time. Diversions at Searsville occur by gravity flow through a 16-inch diameter pipe with a screened opening just upstream of the dam. The pipeline extends through the dam,

and continues to the campus distribution system as a 12-inch diameter pipeline. The diversion includes no infiltration gallery, flume, or pumps, and is operated by manual opening of a valve to the pipeline that is hydraulically limited to 3 cfs (as it has always been). There is no outlet valve or bypass facility at Searsville Dam. Searsville Lake has accumulated sediment over the last century, displacing approximately 90 percent of the original 1000 acre-feet storage volume.

Diversions at Searsville occur after the initial rainy season storms when the reservoir is spilling, and continue into the late spring/early summer after the dam stops spilling. For most of the rainy season, the dam spills continuously, except occasionally during long periods without storms. The spillway is a 60-feet long, four feet high section along the top of the dam. The rate of spill varies widely with precipitation events, and can be as high as several thousand cfs.

Stanford's diversions at Searsville are minimal in relation to overall streamflow and discharge from within the watershed (i.e., less than a few hundred acre-feet per year versus the thousands of acre-feet of total spill flow at Searsville alone). Stanford's diversions at Searsville are the most senior diversions in the watershed. The stream reach below Searsville, above the confluence with Bear Gulch Creek, is low quality as steelhead habitat, as compared to other stream reaches in the watershed (including Bear Gulch Creek).

The description of Searsville Dam and Reservoir is included here for informational purposes only. Operations at the Searsville Dam and Reservoir were not part of Stanford's notification to the Department and the Department has not made a determination as to the applicability of Fish and Game Code section 1600 *et seq.* to Searsville Dam and Reservoir.

## ATTACHMENTS

Attachment 1-A: Diversion and Bypass Operations at Los Trancos Creek

Attachment 1-B: Diversion and Bypass Operations at San Francisquito Creek

Attachment 2: Water Rights Summary

Attachment 3: Lake Water Sources

Attachment 4-A: Preliminary Los Trancos Creek Fish Ladder Facility Flow Through Proposed Structure Site Plan prepared by Wood Rodgers, dated April 13, 2005. (The preliminary operating strategy on the sheet has been superseded and is no longer valid.)

Attachment 4-B: Preliminary Los Trancos Creek Fish Ladder Facility Existing Structures Site Plan prepared by Wood Rodgers, dated January 12, 2006.

Attachment 4-C: Preliminary Los Trancos Creek Fish Ladder Facility Proposed Modification Site Plan, prepared by Wood Rodgers, dated April 13, 2004.

Attachment 5: The San Francisquito Creek Pump Station Capacity Upgrade Improvements, comprising one sheet drafted by Wood Rodgers, dated January 24, 2006.

Attachment 6: Wood Rodgers preliminary design report (April 13, 2004).

Attachment 7: Steelhead Monitoring Program in Los Trancos Creek, Biological Surveys for Steelhead Passage and Habitat Quality on Los Trancos Creek, 2003-2005 (Carmen, 2005).

Attachment 8: An Assessment of Bypass Flows to Protect Steelhead below Stanford University's Water Diversion Facilities on Los Trancos Creek and San Francisquito Creek (Stern, 2005)

Attachment 9: Stanford's Streambed Alteration Application (submitted in October, 2005) and revised Project Description (May 29, 2007).

## PROJECT MEASURES

### Project Description and Attachments

The measures set forth below and in Attachments 1-A and 1-B are enforceable requirements for the project as described in this Agreement and in Attachment 9. Attachments 2 through 9, inclusive, are part of the administrative record for this Agreement. Attachments 2 through 9 are provided for informational purposes only and are not incorporated herein as measures.

### Commencement of Construction

Commencement of construction is defined in this Agreement to be any new diversion or obstruction of the natural flow of, or the disturbance of the bed, channel, or bank of a river, stream, or lake by construction equipment, materials, or activities associated with the construction, operations, or maintenance activities covered by this Agreement.

### Measures for All Three Projects

1. The presence of heavy machinery used in the fish ladder and pump station construction and staging areas, and necessary dewatering activities at both Los Trancos and San Francisquito Creeks, and the need for access and staging areas at all sites could potentially adversely affect sensitive habitats and cause direct and indirect injury or death to steelhead, California red-legged frog, and other native species. Stanford will consult with the appropriate agencies to develop a Biological Impacts Minimization Plan to avoid and minimize the biological impacts of construction and maintenance to sensitive habitats and species. The plan shall be submitted to the Department for review and approval prior to commencing construction. The plan shall include at a minimum, the following:

a. the duties, responsibilities, and qualifications of the Project Biologist (also referred to as the Ecological Monitor) and qualified fisheries and wildlife biologists working on the Project;

b. appropriate measures for removal and relocation of steelhead, California red-legged frog, and other native species prior to Project construction and during maintenance;

c. acceptable protocols for assuring that steelhead, California red-legged frog, and other native species do not re-enter the Project sites;

d. the procedure for supervising the installation and maintenance of construction fencing to protect the riparian zone and other sensitive areas prior to and during construction activities;

e. procedures for prevention and containment of pollutants from heavy equipment and service vehicles operating near the stream zone;

f. appropriate measures for removal and/or relocation any steelhead, California red-legged frog, and other native species encountered on the Project site after initial removal and relocation efforts;

g. best management practices, such as hay bales, silt fencing, provision of gravel filters, to minimize sedimentation downstream of the construction site.

h. identification of the location and areas impacted, including the staging areas and assess points, to allow appropriate measures to be developed to minimize impacts to all sensitive areas impacted by the Project; and

i. identification of expected routine maintenance activities at all facilities covered by the Agreement, and how those activities will be carried-out (e.g., work periods, equipment used, proposed avoidance/minimization measures).

2. Prior to commencing construction, Stanford shall submit and have approved by the Department, a mitigation and monitoring plan for the restoration and mitigation measures intended to compensate for the loss, both temporary and permanent, of wetlands, instream habitat, and riparian vegetation. Such losses include those within the construction, staging, and access areas. The submittal should include a planting schedule, site plan, any necessary irrigation details, target and success criteria, and a monitoring schedule.

3. Prior to commencing construction, a qualified biologist shall conduct an educational session for the work crews and foremen. The session shall include identification concerning the sensitive habitat, sensitive resources present, the need for special care to avoid impacts, and appropriate procedures to follow if any sensitive species enter the work areas.

## Felt Lake Project Measures

4. As part of the Biological Impacts Minimization Plan, and prior to commencing construction, Stanford shall submit a detailed monitoring, rescue, and restoration plan for aquatic resources at Felt Lake. The plan shall be approved by the Department before work begins. The plan shall:

   a. identify how any remaining water will be removed and where it will be taken or discharged;

   b. if water is to be drained, specify how aquatic life will be prevented from being stranded or entrained by the pumping or flow through a ditch;

   c. identify what will be done with both native and non-native wildlife stranded by the drawdown and include a narrative for each species or groups of species potentially found with similar requirements;

   d. provide details on what the desired species mix will be in the lake after restoration, including the information already provided in the response to the Department's previous incomplete determination letter to Stanford; and

   e. Include measures to ensure there is no release of exotic species or pathogens into nearby watercourses.

5. Prior to commencing construction, Stanford shall submit a detailed grading, drainage, and erosion control plan for the dredging of the spoils from Felt Lake, and the placement of the excavated material as fill in nearby locations. The plan shall be approved by the Department before work begins.

6. Any sediment removal after the initial grading described in the plan required in Condition 4 shall occur only after consultation with the Department to determine if the activity is jurisdictional (i.e., subject to Fish and Game Code section 1602). If the activity is jurisdictional, the Department will notify Stanford if the proposed activity requires an amendment to this Agreement or a new Streambed Alteration Agreement.

## Los Trancos Project Measures

7. Prior to commencing construction, Stanford shall submit and have approved by the Department detailed design drawings and specifications for the Los Trancos project, including plans for the screen and fishway, measuring devices, and access and staging areas.

8. Prior to commencing construction, Stanford shall submit and have approved by the Department a detailed grading, drainage, and erosion control plan for the construction of the Los Trancos Diversion facility, and the bank stabilization project proposed as mitigation for instream habitat impacts downstream.

9. No more than 48 hours prior to commencing construction, a qualified biologist shall

survey the project area for the presence of steelhead, California red-legged frogs, western pond turtles, and other native species. If individuals of these species are located, the procedures in the approved Biological Impacts Minimization Plan shall be followed.

10. The Project Biologist shall monitor the site in accordance with the schedule in the Biological Impacts Minimization Plan to ensure the exclusion fencing is sound and in place, and that no sensitive species have entered the work area. If sensitive species have entered the work area, the procedures in the approved Biological Impacts Minimization Plan shall be followed.

11. To the extent practicable, work must be performed in isolation from the flowing stream. If there is any flow when the work is done, Stanford shall construct coffer dams upstream and downstream of the excavation site and divert all flow from upstream of the dam to downstream of the dam. The coffer dams shall be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams must be breached to return the stream flow to its natural channel. If Stanford wishes to use another method, it shall submit a proposal to the Department for its review and approval as part of the Biological Impacts Mitigation Plan.

12. Prior to commencing any construction at the Los Trancos facility, Stanford shall submit a screening plan for the Los Trancos diversion consistent with the Department's and NMFS's fish screening criteria as verified by those agencies' engineers. Work shall not begin until the Department has approved the design.

13. The minimum bypass flows in this Agreement will be measured as the flow below the facility, which shall be comprised of the flows passed through the fish ladder and flows or seepage through the radial gate. Stanford will ensure that the available flow is routed to and passed through the fish ladder (as opposed to the radial gate) to ensure passage and attraction flows through the fish ladder facility for steelhead of all life stages, consistent with the operational design of the fish ladder facility.

14. Diversion shall only occur at this facility between December 1st and April 30th. No flows shall be diverted and all flows shall bypass the Los Trancos facility from May 1st to November 30th each year.

15. Stanford agrees not to exceed the maximum instantaneous rates of diversions and to meet the minimum bypass flows in Attachment 1-A.

16. Prior to commencing any construction, Stanford shall submit and have approved by the Department a Flow Ramping Plan to avoid impacts to downstream resources due to abrupt changes in released or diverted flows.

17. Prior to commencing any construction, Stanford shall submit and have approved by the Department a Sediment Removal/Replenishment Plan for this facility.

## San Francisquito Project Measures

18. Prior to commencing any construction, Stanford shall submit and have approved by the Department the detailed design drawings and specifications for the San Francisquito Creek project, including plans for the rock spurs, infiltration gallery, and intake gallery, fish screens, measuring devices, and staging and access areas.

19. Prior to commencing any construction, Stanford shall submit and have approved by the Department a detailed grading, drainage and erosion control plan for the construction of the San Francisquito Creek diversion facility.

20. No more than 48 hours prior to commencing any construction, a qualified biologist shall survey the project area for the presence of steelhead, California red-legged frogs, western pond turtles, or other native species. If individuals of these species are located, the procedures in the approved Biological Impacts Minimization Plan shall be followed.

21. The Project Biologist shall monitor the site on a scheduled as agreed to in the Biological Impacts Minimization Plan to ensure the exclusion fencing is sound and in place and that no sensitive species have entered the work area. If sensitive species have entered the work area, the procedures in the approved Biological Impacts Minimization Plan shall be followed.

22. To the extent practicable, work must be performed in isolation from the flowing stream. If there is any flow when the work is done, Stanford shall construct coffer dams upstream and downstream of the excavation site and divert all flow from upstream of the dam to downstream of the dam. The coffer dams shall be constructed with clean river gravel or sand bags, and may be sealed with sheet plastic. Sand bags and any sheet plastic shall be removed from the stream upon project completion. Clean river gravel may be left in the stream, but the coffer dams must be breached to return the stream flow to its natural channel.

23. The operator shall construct a sediment barrier parallel to the bank and just outside the project area. The sediment barrier shall be an impervious sheeting or very tight mesh filter fabric well-anchored to the bottom of the stream and reaching above water level sufficiently high to contain the roiled water along the bank. The sediment barrier shall be tied into the bank upstream and downstream of the work site to isolate the work site from the flowing stream. If Stanford wishes to use another method, it shall submit a proposal in the Biological Impacts Minimization Plan for review and approval.

24. Prior to commencing any construction at the San Francisquito facility, Stanford shall submit and have approved by the Department and NMFS a screening plan for the San Francisquito Diversion facility.

25. Stanford agrees not to exceed the maximum instantaneous rates of diversion and to meet the minimum bypass flows in Attachment 1-B. At no time shall the maximum instantaneous rate of diversion at this facility exceed 8 cfs.

26. Diversion shall only occur at this facility between from December 1st through June 30th. No flows shall be diverted and all flows must bypass the San Francisquito Creek facility from July 1st to November 30th each year.

27. Prior to commencing any construction, Stanford shall submit and have approved by the Department a Sediment Removal Plan for this facility.

## Compliance Monitoring Measures

28. Flow measuring devices shall be installed for the purpose of taking real time measurement of the following:

    a. the instantaneous rate of flow (measured in cfs) in Los Trancos Creek at a point approximately 150 feet upstream (or as otherwise agreed to by the State Water Resources Control Board) and at the diversion facilities or downstream of the Los Trancos Creek Felt Lake Diversion Flume;

    b. the instantaneous rate (measured in cfs) and quantity (measured in af) of all water diverted into the Los Trancos Felt Lake Diversion flume;

    c. the instantaneous rate of flow (measured in cfs) in San Francisquito Creek at a point upstream and a point downstream of the San Francisquito Creek Diversion Facility; and

    d. the instantaneous rate (measured in cfs) and quantity (measured in af) of all water diverted at the San Francisquito Creek Diversion facility.

29. The records from the above flow measuring devices shall be used to carry out a flow compliance monitoring program, specifically designed to demonstrate full compliance with the measures of this Agreement.

30. Data collected under the flow compliance monitoring program shall consist of daily average flows and daily minimum and maximum instantaneous flows. More detailed data, for example, hourly flows, shall be made available to the Department on request.

31. By August 1st of each year, a summary of the report of the flow compliance monitoring program conducted over the previous diversion season shall be provided to the Department. The report shall provide a summary of the flow data collected in a manner that clearly demonstrates whether or not the flow and diversion rate measures of the Agreement were met.

## Project Effectiveness Monitoring Plan

32. As part of the Department's review of the Agreement pursuant to the California Environmental Quality Act, Stanford shall submit to the Department a monitoring plan for its review and evaluation. The purpose of the monitoring plan will be to

evaluate and document that the modification and operation of the facilities are achieving the steelhead passage and habitat enhancing objectives of the modifications and proposed bypass flows. These objectives are the protection of steelhead from entering diversion flows (by screens) and adequate depth and flow for passage and sustaining pools. The plan shall include at a minimum the following elements:

a. a date on which the annual report will be submitted;

b. identification of monitoring points at critical passage areas, such as riffles or barriers, that will monitored to ensure that passage has been achieved;

c. identification of monitoring points at critical rearing areas that will monitored to ensure that flow enhancement is supporting rearing habitat;

d. the methods and criteria used to evaluate the critical areas to determine whether habitat value and/or passage ability has been improved and, if so, by how much; and

e. if the observed flows have not improved conditions, possible additional measures that could achieve the desired ends.

**Status Report**

33. Stanford shall submit to the Department a status report every four years that meets the requirements in Fish and Game Code section 1605(g)(2). Notwithstanding any other measure in this Agreement, the provisions described in Fish and Game Code section 1605(g)(3) shall apply after the Department receives the status report.

**General Operation and Construction Measures**

34. Nothing in this Agreement shall be interpreted as authorizing the diversion of water or storage of water without a valid basis of right, nor shall any measures in this Agreement be construed as a waiver, forfeiture, abandonment, or estoppel of Stanford's water rights to Los Trancos and San Francisquito Creeks.

35. The Los Trancos and San Francisquito diversion and passage facilities shall be operated in accordance with the measures in this Agreement, Attachments 1-A and 1-B and plans similar to those described in Attachments 4-A, 4-B, and 4-C as approved by the Department.

36. Any maintenance activities that are not described in the Biological Impacts Minimization Plan that must take place in flowing water, or are likely to result in a discharge to flowing water, must be preceded by consultation with the Department to determine if the activity will require an amendment to this Agreement or a new Streambed Alteration Agreement.

37. Except as otherwise described herein and plans developed hereunder, any work described in this Agreement within the bed, bank, or channel of a stream, river, or

lake shall be confined to the period June 15th to October 15th. Revegetation work is not confined to this time period, but must be completed in the same calendar year.

38. Temporary construction fencing shall be erected to designate the construction corridor within the riparian/stream corridor. Temporary construction fencing shall be removed within 30 days of the completion of construction work. Work shall not occur outside of the fenced area without notification and authorization by the Department. If the Department fails to respond within two working days, the activity may proceed as originally notified.

39. Any trees or shrubs removed between March 1st and August 30th must be surveyed by a qualified biologist to determine if the trees or shrubs contain active bird nests. If active nests are present, the vegetation may not be disturbed until the young have fledged. In addition, an appropriate construction buffer must be established in consultation with the Department to avoid disturbance of any nest. Stanford is encouraged to identify between September 30th and February 28th any trees and shrubs that will need to be removed to accommodate the work schedule, and to remove those trees and shrubs immediately.

40. Erosion control measures shall be utilized throughout all phases of operation where sediment runoff from exposed slopes threatens to enter waters of the state. At no time shall silt laden runoff be allowed to enter the stream or directed to where it may enter the stream.

41. Building materials and/or construction equipment shall not be stockpiled or stored where they could be washed into the water or where they will cover aquatic or riparian vegetation.

42. Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake, by Stanford or any entity working on behalf of Stanford, shall be removed immediately.

43. Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time, the poured concrete shall be kept moist and runoff from the concrete shall not be allowed to enter a live stream. Commercial sealants (e.g., Deep Seal and Elasto-Deck BT Reservoir Grade) may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is dry. This condition applies to any future maintenance operations as well as initial construction.

44. Any equipment or vehicles driven or operated within or adjacent to the stream, river, or lake shall be checked and maintained daily to prevent leaks of materials that if introduced to water could be deleterious to aquatic life, wildlife, or riparian habitat.

45. Any equipment or vehicles driven or operated within or adjacent to the stream, river, or lake shall be cleaned of all external oil, grease, and materials that, if introduced to water, could be deleterious to aquatic life, wildlife, or riparian habitat.

46. Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a stream, river, or lake shall be positioned over drip pans.

47. If any sensitive species are observed in Project surveys, Stanford shall submit Natural Diversity Data Base ("NDDB") forms to the NDDB for all preconstruction survey data within five working days of the sightings, and provide the Department's Bay Delta Region with copies of the NDDB forms and survey maps.

48. Construction, erosion control, revegetation, and biological mitigation measures shall be carried out as specified in plans to be finalized by Stanford and approved by the Department. If there are any subsequent changes, those changes shall not conflict with the provisions of this Agreement. In the event of any conflict, the provisions in this Agreement shall apply.

## Administrative Measures

49. Stanford shall notify the Department within 10 working days of beginning work and within 10 working days of completing any work this Agreement covers. Notification shall be made by telephone to Dave Johnston at 831-466-0234 or by email to Mr. Johnston at djohnston@dfg.ca.gov.

50. In the event that the Project scope, nature, or environmental impact is altered by the imposition of conditions or requirements by any local, state, or federal regulatory agency, Stanford shall notify the Department of any such conditions or requirements that conflict with this Agreement.

51. If Stanford requires more time to complete an authorized activity, Stanford may request Mr. Johnston or, alternatively, the Department's Bay Delta Region (707-944-5520) to extend the work period on a day-to-day basis.

52. A copy of this Agreement shall be provided to Stanford's contractors, subcontractors, and any other persons completing work this Agreement covers, and shall be available at all work sites.

## Enforcement

53. Department personnel or its agents may inspect work sites at any time. To the extent practicable, the Department shall provide advance notice to Stanford before Department personnel enter a work site. The Department shall be responsible, and Stanford shall not be responsible, for any injury to persons or property during an inspection arising from the acts and omissions of Department personnel or agents.

54. Stanford agrees to comply with this Agreement and agrees to be solely responsible

for any violations of this Agreement. The Department may suspend or revoke this Agreement at any time if it determines that a violation has occurred. Prior to suspending or revoking this Agreement, the Department shall notify Stanford in writing and shall explain the basis for the proposed suspension or revocation, and Stanford shall be given an opportunity to correct any deficiency before the suspension or revocation takes effect as specified in the Department's notice.

54. Nothing in this Agreement precludes the Department from pursuing an enforcement action against Stanford or any other party instead of or in addition to suspending or revoking the Agreement

55. Nothing in this Agreement limits or otherwise affects the Department's enforcement authority or that of its enforcement personnel.

## Other Environmental Laws

56. This Agreement does not relieve Stanford from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the activities covered by this Agreement.

57. This Agreement does not relieve Stanford from complying with provisions other than section 1600 *et seq.* in the Fish and Game Code, including, but not limited to, the California Endangered Species Act (Fish & G. Code, § 2050 *et seq.*) sections 5650, 5901, and 5937.

## Amendments

58. Stanford shall notify the Department of any modifications it intends to make to the Project. Such modifications may require an amendment or a new notification.

59. This Agreement may be amended at any time, provided the amendment is agreed to in writing by both parties. Mutually-approved amendments shall be attached to and become part of the Agreement.

## Term

60. The term of this Agreement shall be twenty (20) years from the date of last signature below.

61. Stanford may request one extension of the Agreement in accordance with Fish and Game Code section 1605(b).

## Effective Date

62. This Agreement shall become effective after the Department signs it, which shall be after Stanford's signature and after the Department has completed its required review and approval of the Agreement under CEQA.

## Transfer

63. This Agreement may be transferred only with the Department's written consent.

## Other Agreements

64. This Agreement supersedes any other agreement or understanding between the Department and Stanford relating to the facilities covered by this Agreement.

## Signature

By signing this Agreement, Stanford agrees that this Agreement shall constitute the proposed project for purposes of the Department's required review under CEQA; accepts and agrees to implement the measures herein if the Department executes the Agreement and Stanford proceeds with the Project; and understands that it may not proceed with the Project without a Streambed Alteration Agreement for the Project executed by the Department.

**STANFORD UNIVERSITY**

Tom W. Zigterman Date: 7/3/07
Tom W. Zigterman
Associate Director of Utilities

**CALIFORNIA DEPARTMENT OF FISH AND GAME**

_____ Date: _____
Charles Armor
Acting Regional Manager
Bay Delta Region

# ATTACHMENT 1 A

## Bypass and Diversion Operational Plan for Stanford's Water Diversions from Los Trancos Creek

1) **For Los Trancos Creek the following terms are incorporated into SAA 1600-2005-0735-3**
   a) Stanford will not divert from Los Trancos Creek, under any basis of right, between May 1 and November 30 and all flows must be allowed to bypass.
   b) Diversions at the Los Trancos Creek diversion facility are limited to the period between December 1 and April 30, as follows:
      i) The maximum instantaneous diversion rate is limited to 40 cfs, less the simultaneous rate of flow diverted at the San Francisquito Creek facility.
      ii) Beginning December 1, the instantaneous bypass will not be less than 2 cfs (or natural flow, if less than 2 cfs).
      iii) Beginning January 1, or earlier if the "trigger" event described in paragraph 1.c occurs prior to January 1, the instantaneous bypass flows will not be less than 5 cfs (or natural flow, if less than 5 cfs) when flows upstream of the facility are less than 8 cfs, and will be 8 cfs when flows upstream of the facility are equal to or greater than 8 cfs for two hours.
   c) The "trigger" event for flows described in paragraph 1.b.iii occurs when the Creek has had a mean daily (i.e., calendar day/24 hour) flow above the Los Trancos Creek Diversion facility of 8 cfs or more, any time after October 1.

| Time period | Trigger has occurred (see section 1.c above) | Required bypass (cfs) |
|---|---|---|
| December | no | 2 cfs or the natural inflow |
| December | yes | 5 cfs, or the natural inflow, if flows upstream are < 8<br>8 cfs if flows upstream are ≥ 8 cfs |
| January-April | No trigger required | 5 cfs, or the natural inflow, if flows upstream are < 8<br>8 cfs if flows upstream are ≥ 8 cfs |

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# ATTACHMENT 1B

## Bypass and Diversion Operational Plan for Stanford's Water Diversions from San Francisquito Creek

2) **For San Francisquito Creek the following terms are incorporated into SAA 1600-2005-0735-3**

a) Stanford will not divert from San Francisquito Creek, under any basis of right, from July 1 through November 30.

b) From December 1 through June 30, the instantaneous bypass flows and the maximum instantaneous rate of diversion at the San Francisquito Creek pump station are as set forth in the chart below.[1]

Operational plan for water diversions and bypass flows at the San Francisquito Creek diversion facility.
(Stream flow is discharge at the USGS Gauge near Stanford.)

| Stream flow (cfs) | Max Diversion Rate (cfs) | Bypass Flow (cfs) | | Stream flow (cfs) | Max Diversion Rate (cfs) | Bypass Flow (cfs) |
|---|---|---|---|---|---|---|
| 0-5 | 0 | All flow | | 24 | 8 | 16 |
| 6 | 1 | 5 | | 25 | 8 | 17 |
| 7 | 2 | 5 | | 26 | 8 | 18 |
| 8 | 3 | 5 | | 27 | 8 | 19 |
| 9 | 4 | 5 | | 28 | 8 | 20 |
| 10 | 5 | 5 | | 29 | 8 | 21 |
| 11 | 6 | 5 | | 30 | 8 | 22 |
| 12-16 | 0 | All flow | | 31 | 8 | 23 |
| 17 | 1 | 16 | | 32 | 8 | 24 |
| 18 | 2 | 16 | | 33 | 8 | 25 |
| 19 | 3 | 16 | | 34-40 | 0[a] | All flow |
| 20 | 4 | 16 | | 41-46 | 4[a] | 37-42 |
| 21 | 5 | 16 | | 47 | 8 | 39 |
| 22 | 6 | 16 | | 48 | 8 | 40 |
| 23 | 7 | 16 | | >49 | 8 | >41 |

[a]Maximum instantaneous pumping rate could be increased to 8 cfs over this range of flow if the riffle at Transect 3 is modified and able to successfully pass adult steelhead between flows of 16 and 40 cfs and Bonde Weir is modified to successfully and efficiently pass adult steelhead at flows of 16 to 100 cfs.

c) Consistent with paragraph 2.b, the maximum instantaneous rate of diversion at the San Francisquito Creek pump station (whether to the Felt Lake/campus distribution system, to Lagunita, or to both systems simultaneously) will not exceed 8 cfs, under any basis of right.

i) The maximum instantaneous rate of diversion to Lagunita will not exceed 4 cfs.

ii) From December 1 through April 30, Stanford may divert up to 8 cfs at the San Francisquito Creek pump station even if the instantaneous diversion amount is greater than the flows simultaneously bypassed at the Los Trancos Creek diversion facility, provided that the combined instantaneous diversions at the San Francisquito Creek pump station and the Los Trancos Creek diversion facility do not exceed 40 cfs.

[1] If at a later date modifications at downstream barriers occur that would allow changes in bypass flows, Stanford may prepare a new bypass flow plan and submit it to the Department for review and approval as part of a request to amend this Agreement.

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**Note:**

**Attachments 2 through 9 were bound separately from the executed 1602 Lake and Streambed Alteration Agreement, and are not included.**