



COUNTY OF PLACER
Community Development Resource Agency

John Marin, Agency Director

PLANNING

Michael J. Johnson
Planning Director

MEMORANDUM

TO: Honorable Board of Supervisors

FROM: Michael J. Johnson, Director
Planning Department, Community Development Resource Agency

DATE: October 2, 2007

SUBJECT: Contract with Winzler & Kelly to complete the first phase of the Auburn Ravine Fish Passage Restoration Project

ACTION REQUESTED:

The Planning Department recommends that the Board of Supervisors take the following action: Authorize the Purchasing Manager to execute a \$260,000 contract with Winzler & Kelly to complete the first phase of the Auburn Ravine Fish Passage Restoration Project. Eight firms submitted proposals. Winzler & Kelly was selected based upon the firm's approach, methodology, experience, and team composition. They will be responsible for completing the final design plan, all necessary State/Federal permits and CEQA/NEPA documentation.

BACKGROUND:

A recent California Fish & Game fish assessment/survey determined that between 10,000 and 11,000 rainbow trout per stream mile utilized Auburn Ravine above the two dams. Currently, neither steelhead nor Chinook salmon can pass through either structure unless under extremely high flow conditions. Project partners include: Nevada Irrigation District; City of Lincoln; Dry Creek Conservancy; Granite Bay Flycasters; American Basin Council of Watersheds; California Fish & Game; NOAA Fisheries; Lincoln High School; Granite Bay Flycasters; Northern California Council Federation of Fly Fishers; Gold Country Fly Fishers; and private landowners.

The proposed project will focus on the modification of two dams in Auburn Ravine that inhibit and/or limit anadromous fish passage except during periods of high flow volumes. Auburn Ravine has been designated as critical habitat for Central Valley Steelhead. The project is a component of the Auburn Ravine/Coon Creek (AR/CC) Ecosystem Restoration Plan and the sites proposed have been categorized as high priority in a feasibility study titled *Anadromous Fish Screening and Passage Opportunities in Western Placer County and Southern Sutter County*. In addition, a conceptual design report, *Auburn Ravine Gauging Station Site Selection and Fish Passage Modifications Conceptual Design Report*, was developed to further focus on the two dams in question. The plan and the studies, initiated by Placer County, were funded by the California Bay Delta Authority. The sequences of events for this Project are as follows:

- July 2005 - Project identified as a priority project by the Auburn Ravine/Coon Creek Watershed Group.
- September 2005 to May 2007 – County conducts a series of stakeholder meetings to build support for the project and secure matching funds.
- January 2006 – Project feasibility study completed.

- July 2006 – The Cosumnes, American, Bear and Yuba River Integrated Water Regional Management Plan (CABY IRWMP) identifies Auburn Ravine Fish Passage Restoration Project as a top priority for the region.
- November 2006 – California Department of Fish Game (DFG) completed a fish assessment study. DFG declares that Auburn Ravine is one of the best trout streams in the entire western Sierra region.
- February 2007 – The Planning Department and Procurement Services proceed with a Request for Proposals. Process will take nearly four months.
- April 2007 - Placer County and the Dry Creek Conservancy are awarded a \$55,000 grant from the Bella Vista Foundation for the Auburn Ravine Fish Passage Restoration Project.
- May 2007 - Placer County is short-listed for a CalFed Watershed Program Grant and asked to submit a full proposal.
- June 2007 - Placer County submits a \$506,000 CalFed Watershed Program Grant.
- June 5, 2005 - Placer County selects a consultant for the Auburn Ravine Fish Passage Restoration Project. Winzler & Kelly is the firm selected to complete Auburn Ravine Fish Passage Restoration Project design/permitting/CEQA work.
- August 2007 - Placer County is awarded \$339,645 grant from the CalFed Watershed Program Grant.

Auburn Ravine, a NOAA Fisheries designated critical habitat stream for Central Valley Steelhead, originates on the north side of the City of Auburn (Exhibit A). At its confluence with the East Side Canal, in the Central Valley in Sutter County, Auburn Ravine drains approximately 79 square miles. The watershed has significant anadromous fish resources, which include fall-run and late fall-run Chinook salmon and steelhead trout. Habitat, water temperature, and water quality requirements for these species are more restrictive than other native fish species, making them important factors in ecosystem restoration activities for the watershed. Surveys completed by California Department Fish and Game biologists and an independent consultant have determined that Auburn Ravine has high quality anadromous fish habitat, confirmed by the presence of a significant rainbow/steelhead trout dominated ecosystem upstream of the Hemphill Dam, and increasing accessibility to the upper reaches could ultimately increase populations especially of fall-run and late fall-run Chinook salmon as well as trigger steelhead trout tendencies in the resident rainbow trout population. By allowing for the out-migration of rainbow trout into the Bay/Delta system, the current resident rainbow trout population could contribute to the total number of steelhead in the region.

The water management scenario for Auburn Ravine provides habitat and water quality conditions that are unparalleled in the Central Valley of California. Water project operations are controlled by a combination of Pacific Gas and Electric Company (PG&E), Nevada Irrigation District (NID), Placer County Water Agency (PCWA), and South Sutter Water District (SSWD). The water management practices by these entities control flow volumes in Auburn Ravine during critical spring, summer, and fall months. The net result of these practices (e.g., much higher than normal flows in April through October, generally cooler water temperatures because of sources of imported water) provide a much higher quantity and quality of anadromous fish habitat than would have occurred historically. The use of the watershed and other adjacent watersheds to convey irrigation water to the western and southeastern side of Placer and Sutter counties, respectively, creates unique summertime habitats not found in other Sierra Nevada foothill locations.

There are eleven potential barriers and/or fish passage impediments located in Auburn Ravine. Three of these structures are considered high priority for modification and include the NID Gauging Station, Hemphill Dam, and NID Auburn Ravine I Dam. The NID Auburn Ravine I Dam is not being proposed for modification under this funding request due to its location upstream of the NID Gauging Station and Hemphill Dam and the alternative approach recommended for fish passage at the site.

The modification of the NID Gauging Station Dam and Hemphill Dam in Auburn Ravine will have the following benefits:

- Provide 13 miles of high quality spawning and rearing habitat for anadromous fish species currently not available.
- Serve as the first major fish passage project to be implemented in Placer County.
- Serve as a model for future fish restoration projects on the western slope of the Sierra Nevada.
- Provide an educational opportunity for schools and the community by serving as a field classroom environment where local residents can observe the life cycle of anadromous fish in their local community.
- Validate the collaborative effort by providing an excellent example of public agencies and the environmental community working together to provide important fish habitat.
- Increase populations of Chinook salmon and steelhead trout in Auburn Ravine.
- Maintain the established partnership between multi-stakeholders in the Auburn Ravine watershed in order to implement future restoration projects that benefit anadromous fish species.
- Present Placer County and the City of Lincoln with the opportunity to secure habitat restoration credit toward meeting our salmonid/riparian conservation objectives as defined by the Placer County Conservation Plan.

FISCAL IMPACT: The \$200,000 needed to complete this phase of the Auburn Ravine Fish Passage Restoration Project is fully encumbered and available through the Planning Department's FY 07/08 budget for Watershed Restoration Implementation. The City of Lincoln (\$10,000) and the Nevada Irrigation District (\$50,000) will be contributing the balance of the \$260,000 contract. The work to be performed is a mandatory step in securing a \$339,645 grant from CalFed, a \$55,000 grant from the Bella Vista Foundation, and matching dollars from the City of Lincoln (\$25,000), the Nevada Irrigation District (\$120,000), and the Granite Bay Flycasters (\$10,000).

Respectfully Submitted,



MICHAEL J. JOHNSON, AICP
Director – Department of Planning

EXHIBITS:

- Exhibit A Contract for Planning Services and Scope of Work
- Exhibit B Auburn Ravine Watershed Map and Fish Passage Improvement Locations
- Exhibit C Description of Fish Passage Structures

cc: Placer County Procurement Office
Winzler & Kelly
American Basin Council of Watersheds

DESCRIPTION: CONTRACT FOR PLANNING SERVICES – Auburn Ravine Fish Passage Restoration

THIS AGREEMENT, entered into this _____ day of _____ 2007, by and between the COUNTY OF PLACER (hereinafter called the "COUNTY"), and WINZLER & KELLY, (hereinafter called the "CONSULTANT").

In consideration of the promises and covenants hereinafter set forth, the parties agree as follows:

1. Consulting Services

- a. CONSULTANT agrees, during the term of this Agreement, to perform the services set forth below and in Exhibit A - Scope of Services.
- b. CONSULTANT, shall be obligated to devote as much of its attention, skill, and effort as may be reasonably required to perform the services described herein in a professional and timely manner.

2. Duties of County

To permit CONSULTANT to render the services required hereunder, COUNTY shall, at its expense and in a timely manner:

- a. Appoint a staff member to act as coordinator between the COUNTY and the CONSULTANT;
- b. Provide the CONSULTANT with all existing relevant information for the subject project;
- c. Promptly review any and all documents and materials submitted to COUNTY by CONSULTANT;
- d. Promptly notify CONSULTANT of any fault or defect in the PROJECT in any way relating to the performance of CONSULTANT'S services hereunder; and

3. Personnel

All services required hereunder and in Exhibit A shall be performed by the CONSULTANT.

4. Payment

The COUNTY agrees to pay to CONSULTANT a maximum of two hundred and sixty thousand dollars (\$260,000) as the sole compensation under this Agreement for the scope of work as described in Exhibit A. Payment shall be made monthly based on time and materials charges according to the fee schedule set forth in Exhibit A attached hereto and incorporated herein by reference.

- a. The cost of additional services as may be requested by the parties hereto shall be mutually agreed upon in writing prior to commencement of such additional work.
- b. COUNTY retains the right to require proof of services performed or costs incurred prior to any payment under this Agreement.
- c. The COUNTY retains the right to require the submittal by the CONSULTANT of all background research materials generated by the CONSULTANT in the preparation of any report prepared pursuant to this contract.
- d. The term "costs" as used in this section includes, but is not limited to, the following items and is the sole responsibility of the CONSULTANT: printing, clerical, mailing, etc.
- e. Payment shall only be made for work or attendance at meetings specifically authorized by the COUNTY.
- f. CONSULTANT shall have the right to stop work at any time during the project should COUNTY fail to pay CONSULTANT within thirty (30) days of receipt of an invoice.

5. Termination

This Agreement may be terminated by CONSULTANT for cause upon serving thirty (30) day advance notice or by COUNTY for or without cause upon serving ten (10) days advance notice in writing to the other party. Such notice shall be personally served or given by United States Mail. In the event of termination by COUNTY without cause, CONSULTANT shall be paid for all work performed to the date of termination. In the event of termination by CONSULTANT without due cause, CONSULTANT shall be paid for all work performed to the date of termination, less any estimated increase in cost for completion of the work occasioned by such early termination by CONSULTANT, but in no event less than zero.

6. Uncontrollable Delay

All agreements on CONSULTANT'S part are contingent upon and subject to the provision that CONSULTANT shall not be responsible for damages or be in default by reason of delays in performance by reason of strikes, lockouts, accidents, acts of God, and any other delays unavoidable or beyond CONSULTANT'S reasonable control. In the event of any such cause of delay, the time of completion shall be extended accordingly.

7. Ownership of Documents

CONSULTANT agrees to return to the COUNTY, upon termination of this Agreement, all documents, drawings, photographs, and other written or graphic material, however produced, received from COUNTY and used by CONSULTANT in the performance of its services hereunder. All work papers, drawings, internal memoranda, graphics, photographs, and any written or graphic material, however produced, prepared by CONSULTANT in connection with its performance of services hereunder shall be, and shall remain after termination of this Agreement, the property of the COUNTY and may be used by the COUNTY for any purpose whatsoever. COUNTY agrees to absolve CONSULTANT of any liability resulting from such future use.

8. Representations

CONSULTANT represents that services will be performed with the usual thoroughness and competence of the profession, in accordance with the standard for professional services at the time those services are rendered.

9. Hold Harmless and Indemnification Agreement

The CONSULTANT hereby agrees to protect, defend, indemnify, and hold PLACER COUNTY free and harmless from any and all losses, claims, liens, demands, and causes of action of every kind and character including, but not limited to, the amounts of judgments, penalties, interest, court costs, legal fees, and all other expenses incurred by PLACER COUNTY arising in favor of any party, including claims, liens, debts, personal injuries, death, or damages to property (including employees or property of the COUNTY) and without limitation by enumeration, all other claims or demands, to the extent caused by CONSULTANT'S negligent acts, errors, or omissions or willful misconduct. CONSULTANT agrees to investigate, handle, respond to, provide defense for, and defend any such claims, demand, or suit at the expense of the CONSULTANT to the extent caused by CONSULTANT'S negligent acts, errors, omissions or willful misconduct. This provision is not intended to create any cause of action in favor of any third party against CONSULTANT or the COUNTY to enlarge in any way the CONSULTANT'S liability but is intended solely to provide for indemnification of PLACER COUNTY from liability for damages or injuries to third persons or property to the extent arising from CONSULTANT'S negligent performance or willful misconduct pursuant to this Agreement.

As used above, the term PLACER COUNTY means Placer County or its officers, agents, employees, and designated volunteers.

10. Insurance

CONSULTANT shall file with COUNTY concurrently herewith a Certificate of Insurance, in companies acceptable to COUNTY, with a Best's Rating of no less than A:VII certifying insurance coverage under policies and endorsements as required in paragraphs 11 - 15 below.

11. Worker's Compensation and Employers Liability Insurance

Worker's Compensation Insurance shall be provided as required by any applicable law or regulation. Employer's liability insurance shall be provided in amounts not less than one million dollars (\$1,000,000) each accident for bodily injury by accident, one million dollars (\$1,000,000) policy limit for bodily injury by disease, and one million dollars (\$1,000,000) each employee for bodily injury by disease.

If there is an exposure of injury to CONSULTANT'S employees under the U.S. Longshoremen's and Harbor Worker's Compensation Act, the Jones Act, or under laws, regulations, or statutes applicable to maritime employees, coverage shall be included for such injuries and claims.

Each Worker's Compensation policy shall be endorsed with the following specific language:

Cancellation Notice - "This policy shall not be canceled without first giving thirty (30) days prior written notice to the County of Placer."

CONSULTANT shall require all SUBCONTRACTORS to maintain adequate Workers' Compensation insurance. Certificates of Workers' Compensation shall be filed forthwith with the County upon demand.

12. General Liability Insurance

a. Comprehensive General Liability or Commercial General Liability insurance covering all operations by or on behalf of CONSULTANT, providing insurance for bodily injury liability and property damage liability for the limits of liability indicated below the including coverage for:

(1) Contractual liability insuring the obligations assumed by CONSULTANT in this Agreement.

(2) One of the following forms is required:

(a) Comprehensive General Liability;

- (b) Commercial General Liability (Occurrence); or
- (c) Commercial General Liability (Claims Made).

(3) If CONSULTANT carries a comprehensive General Liability policy, the limits of liability shall not be less than a Combined Single Limit for bodily injury, property damage, and Personal Injury Liability of:

One million dollars (\$1,000,000) each occurrence
One million dollars (\$1,000,000) aggregate

(4) If CONSULTANT carries a Commercial General Liability (Occurrence) policy:

(a) The limits of liability shall not be less than:

One million dollars (\$1,000,000) each occurrence
(combined single limit for bodily injury and property damage)

One million dollars (\$1,000,000) for Products-Completed Operations

One million dollars (\$1,000,000) General Aggregate

(b) If the policy does not have an endorsement providing that the General Aggregate Limit applies separately, or if defense costs are included in the aggregate limits, then the required aggregate limits shall be two million dollars (\$2,000,000).

(5) Special Claims Made Policy Form Provisions:

CONSULTANT shall not provide a Commercial General Liability (Claims Made) policy without the express prior written consent of COUNTY, which consent, if given, shall be subject to the following conditions:

(a) The limits of liability shall not be less than:

One million dollars (\$1,000,000) each occurrence
(combined single limit for bodily injury and property damage)

One million dollars (\$1,000,000) aggregate for Products Completed Operations

One million dollars (\$1,000,000) General Aggregate

- (b) The insurance coverage provided by CONSULTANT shall contain language providing coverage up to six (6) months following the completion of the contract in order to provide insurance coverage for the hold harmless provisions herein if the policy is a claims made policy.

13. Endorsements

Each Comprehensive or Commercial General Liability policy shall be endorsed with the following specific language:

- a. "The County of Placer, its officers, agents, employees, and designated volunteers are to be covered as insured for liability arising out of the operations by or on behalf of the named insured in the performance of this Agreement."
- b. "The insurance provided by the Consultant, including any excess liability or umbrella form coverage, is primary coverage to the County of Placer with respect to any insurance or self-insurance programs maintained by the County of Placer and no insurance held or owned by the County of Placer shall be called upon to contribute to a loss."
- c. "This policy shall not be canceled without first giving thirty (30) days' prior written notice to the County of Placer."

14. Automobile Liability Insurance

Automobile Liability insurance covering bodily injury and property damage in an amount no less than one million dollars (\$1,000,000) combined single limit for each occurrence.

Covered vehicles should include owned, non-owned, and hired automobiles/trucks.

15. Professional Liability Insurance (Errors and Omissions)

Professional Liability Insurance for Errors and Omissions coverage in the amount of not less than \$1,000,000 per occurrence and \$2,000,000 in aggregate.

16. Notices

- a. Any notice or demand desired or required to be given hereunder shall be in writing and deemed given when personally delivered or deposited in the mail, postage prepaid, sent certified or registered, and addressed to the parties as follows:

COUNTY OF PLACER
Planning Department
Attn: Michael Johnson
3091 County Center Dr., Ste #140
Auburn, CA 95603

CONSULTANT
Winzler & Kelly
Attn: Dave Lindow
3410 Industrial Blvd, Ste #102
West Sacramento, CA 95691

Any notice so delivered personally shall be deemed to be received on the date of delivery and any notice mailed shall be deemed to be received five (5) days after the date on which it was mailed.

- b. No waiver, alteration, modification, or termination of this Agreement shall be valid unless made in writing and signed by all parties.

17. Assignment

No party shall assign, transfer, or otherwise dispose of this Agreement in whole or in part to any individual, firm or corporation without the prior written consent of each of the other parties. Subject to the provisions of the preceding sentence, this Agreement shall be binding upon, and inure to the benefit of, the respective successors and assigns of the parties hereto.

18. Jurisdiction

This Agreement shall be governed by and construed in accordance with the laws of the State of California. Any suit, action, or proceeding brought under the scope of this Agreement shall be brought and maintained in the County of Placer Superior Court, California. The parties each waive any change of venue rights that they may have. The parties each waive any federal court removal and/or original jurisdiction rights that they may have.

19. Entire Agreement

This Agreement sets forth the entire understanding between the parties as to the subject matter of the Agreement and merges all prior discussions, negotiations, letters of understanding, or other promises, whether oral or in writing.

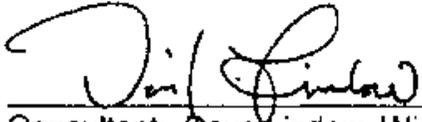
In witness, whereof, the parties have executed this Agreement on the day and year written below.

PLACER COUNTY:

Dave Seward, Purchasing Manager

Date

CONSULTANT:



Consultant: Dave Lindow, Winzler & Kelly
Title: Office Manager

8-20-07

Date

Approved as to Content:



Michael Johnson, Planning Director

9.12.07

Date

Approved as to Form:

County Counsel

Date

EXHIBIT A

Scope of Services for Auburn Ravine Fish Passage Restoration

This Exhibit relates to a Contract Agreement between the County of Placer (County) CLIENT and Winzler & Kelly Consulting Engineers, Inc. (Winzler & Kelly) CONSULTANT. All provisions of the Contract Agreement apply to this Exhibit unless otherwise noted in this Exhibit. Winzler & Kelly will contract directly with subconsultants McBain & Trush, Inc., Michael Love & Associates, and Blackburn Consulting who together comprise the project team. Subconsultants will work with Winzler & Kelly to accomplish the following scope of services.

INTRODUCTION

This scope of services relates to fish passage improvements in Placer County at the Nevada Irrigation District Gauging Station Dam and the Hemphill Dam in Auburn Ravine. The County of Placer is leading a client team of stakeholders interested in the project. Anadromous species of interest are native fall-run Chinook salmon and steelhead trout. According to the California Department of Fish and Game (CDFG), the stream above Hemphill Dam is characterized as rainbow trout dominated habitat. However, several downstream migration barriers prevent anadromous fish from reaching these habitats. Improving upstream passage conditions for the anadromous fishery is expected to revive populations of steelhead trout (anadromous life history of rainbow trout) and Chinook salmon within the Auburn Ravine.

The specific objective of this project is to design and implement fish passage modifications for two of the barriers within the Auburn Ravine: the Nevada Irrigation District (NID) Gauging Weir and the Hemphill Diversion Dam. Two previous studies have been completed that investigated potential fish passage solutions: *The Auburn Ravine Gauging Station Site Selection and Fish Passage Modifications Conceptual Design Report* and *Passage Opportunities in Western Placer County and Southern Sutter County Feasibility Study*. Our work will build upon findings and recommendations presented in these two studies including comments provided by CDFG in order to develop fish passage designs for each site.

Removal of the NID gauging weir is not recommended. If removed and no grade control is constructed in its place, the upstream channel bed would regrade itself. The resulting upstream channel degradation would threaten to undermine piers and abutments of the Highway 66 Bridge and cause downstream channel aggradation, thereby decreasing channel capacity at the Joiner Parkway Bridge. Only minor modifications to the NID gauging weir will be developed as part of this scope.

The Hemphill Dam and flashboards are needed for operating the existing water diversion facility immediately upstream. As a result, removal of the dam is not a feasible option. Instead, design alternatives will focus on modifications of the dam that provide fish passage while allowing for continued function of the diversion facility. For both project sites, CDFG strongly favors alternatives that use the nature-like fishway design approach rather than traditional fish ladder designs.

SCOPE OF SERVICES

The scope of services for this Exhibit is limited to the following:

TASK 1 – PROJECT MANAGEMENT

Winzler & Kelly shall be responsible for project data management, preparation of construction bid documents, and internal consultant budget control as part of this task. Mr. Steven Allen will be the Project Manager on this project.

Mr. Allen, will attend up to ten project meetings with the County and other Stakeholders as agreed herein. Other Team members may attend select meetings, possibly by conference call. The County will be responsible for setting up and coordinating meetings on mutually agreed upon dates and times. The first kick-off meeting will be held to initiate the work, discuss and clarify the project objectives, and review the scope of services and project approach. The objective of this meeting is to understand the Client's goals and objectives, and for the Client and stakeholders to understand the scope of services and project approach.

A meeting will be held upon the completion of the Alternative Analysis Technical Memorandum to discuss the recommendations and allow the Client to select the preferred alternative for each site. Meetings will also occur to present the Draft Fish Passage Design Report, and to present the 60%, 90%, and 100% Design Plan and Specification. The Consultant's Team may help present and attend public meetings if such meetings are part of the ten meeting total and arranged in advance. The County will be responsible for coordinating and advertising all public meetings. Consultant will participate in a total of ten meetings over the course of the project, in person or via conference call. Client will prepare meeting agendas and take meeting minutes.

TASK 2 – DESIGN DEVELOPMENT

The design alternatives for both project sites will focus on using a "nature-like" fishway approach, as recommended to the Client by CDFG. As part of design development, Consultant will develop as few as two and many as three nature-like fishway alternatives for each site. The following are key subtasks required for developing the preferred alternative for each project site:

2.1 Establishment of Design Objectives and Criteria

Design objectives and criteria will be clearly established before developing alternatives. For fish passage, this includes determining the exact species and life stages for which

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passage must be provided (i.e. need to provide upstream juvenile salmonid passage, the time of year to provide passage, the appropriate range of fish passage flows) and the appropriate water velocity, water depth, drop height and turbulence criteria for each target species). Consultant will determine these through coordination with CDFG and NID, from information provided in previous studies, and through applying standard methods and practices.

Client will provide water diversion operational requirements and constraints prior to the Consultant-developing design alternatives. Information that the Client will provide, but is not limited to, establishing (1) needed flow measurement accuracy and range at the NID Gauge and (2) current and future operational requirements of the water diversion facility above the Hemphill Dam.

2.2 Topographic Surveys

Consultant will conduct a topographic survey of each project site to prepare topographic base maps in AutoCAD with one foot contours suitable for design and analysis of alternatives and development of final construction plans. The survey will be used to provide channel geometry for the hydraulic analysis. The surveys will capture basic geomorphic features needed as part of the geomorphic evaluation, such as bed controlling elements, active and bankfull channel elevations, and thalweg profiles. The surveys will not provide any property lines, monuments, boundaries, or right of way information.

2.3 Geotechnical Evaluation

A geotechnical evaluation will be performed on each site. Consultant's Geotechnical subconsultant, Blackburn Consulting, Inc. (BCI) will review the site and any pertinent project documents provided by the Client, including any plans of existing structures, feasibility studies, and stream profiles. They will mark the boring locations for Underground Services Alert (USA) notification, schedule the subsurface exploration, and obtain a County boring permit for the subsurface exploration. Client will provide any necessary access agreements or other permits necessary for the geotechnical investigation.

BCI will drill and sample two test borings at each site. These borings may be supplemented by, or substituted with, channel probes, depending on the required design information. We anticipate the borings to extend to depth of 20 to 30 feet below the structures, or to 10 to 15 feet below the channel bottom. An engineer/geologist will log the borings and direct the sampling. Groundwater/seepage elevations will be noted, if encountered. They will collect bulk and relatively undisturbed soil samples from the borings for laboratory testing. The boring will be backfilled with cement grout, or as required by the permit conditions.

BCI will perform laboratory tests on selected soil samples retrieved from the test borings. The exact test will be determined based on needed design information and field findings, and may include:

- Moisture Content/Unit Weight for bearing capacity and settlement analysis
- Unconfined compressive and/or direct shear strength tests for bearing capacity

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- Sieve Analysis and hydrometer for soil classification and erosion/scour estimates

BCI will perform engineering analysis and prepare a geotechnical report including the following:

- Project and site description
- Vicinity Map
- Description of subsurface conditions
- Discussion of geologic setting
- "Log of Test Borings" drawings, including field and laboratory test results
- Geotechnical recommendations for foundation support of rock weirs, bank stability, and sediment/scour conditions
- Limitations of the report

2.4 Geomorphic, Riparian, and Biological Evaluation

Consultant will document existing (pre-project) fish habitat and riparian vegetation conditions based on the design objectives and criteria (e.g., determining what fish habitat is currently in the project footprint, determining the fish species and life stages to which passage must be provided, the time of year to provide passage, the appropriate range of flows, and the velocity, depth and turbulence criteria that should be applied). This includes documenting (mapping) existing Chinook salmon and steelhead habitat and riparian vegetation to document baseline conditions for predicting habitat under design conditions and for future monitoring. In addition, a qualitative evaluation of stream geomorphology will be conducted based on field reconnaissance, previous survey work from The Mines Group, and limited field surveys by the Consultant.

The 90% and 100% designs (Task 4) will incorporate, as appropriate, elements into the design that improve fish habitat, riparian vegetation, and sediment routing conditions. The amount of fish habitat and riparian habitat will be estimated to predict anticipated habitat and riparian vegetation improvements under the refined design alternative.

2.5 Hydrologic Analysis and Fish Passage Design Flows

Consultant will conduct a hydrologic analysis to help finalize selection of fish passage design flows. Besides using traditional approaches to identify fish passage design flows (e.g. 10% exceedance flow of migration period), the analysis will include examining various components of the hydrograph and evaluating frequency and duration of streamflows for wet, dry, and average water years. This information, along with consultation with CDFG staff, will assist in establishing well suited fish passage design flows for each species targeted in this project.

For evaluating flooding under existing and proposed conditions, estimation of the 100-year peak flow will also be made, if not already established for the project sites. The 1.5-

year and 2-year flood flow magnitudes will be estimated for use in the geomorphic and fish passage assessments.

2.6 Hydraulic Analysis

Consultant will perform a hydraulic analysis of existing conditions and as part of the design and assessment of alternatives. The analysis will include development of an open-channel flow hydraulic model for each project reach, likely using HEC-RAS. Other hydraulic models may also be applied, such as a single cross-section model, when appropriate. The hydraulic models will be used to evaluate existing and proposed conditions within and adjacent to the project reach at fish passage flows and at the 100-year peak flow.

Hydraulic parameters that will be examined for fish passage include water velocities and depths, water surface drops, and turbulence. Design of the nature-like fishway will also include a particle stability analysis for determining the size and gradation of the "engineered streambed material". The hydraulic analysis will be intertwined with the particle stability analysis, since the size of the material determines the flow resistance and fish passage conditions.

2.7 Characterization of Existing Fish Passage Conditions

Based on field data collection and analysis, the existing fish passage conditions at the NID Gauging Weir and the Hemphill Diversion Dam will be described both qualitatively and quantitatively within the Alternative Analysis Technical Memorandum. Where applicable, the fish passage assessment will follow the CDFG protocol, as described in the California Salmonid Stream Habitat Restoration Manual.

2.8 Developing Designs and Evaluating Feasible Alternatives

Consultant will develop design alternatives for modification of the NID Gauging Weir and Hemphill Diversion Dam that use the nature-like fishway approach, CDFG's expressed preferred alternative. Consultant will develop as few as two and many as three alternatives for each site. During this phase the Consultant will rely on close communication with NID and CDFG to ensure that proposed alternatives will be feasible. An Alternative Description Technical Memorandum describing each concept fish passage alternative will be prepared. Schematic drawings of each alternative will accompany the descriptions within the memorandum. The Memorandum will also compare pros and cons associated with each alternative and provide recommendations for a preferred alternative for each site. Following submittal of the Alternative Description Memorandum, the received comments and guidance provided by the Client and stakeholders will lead to selection of a preferred alternative for each site. The preferred alternatives will be further developed as part of Task 3.

Some of the factors that will be considered when evaluating the feasibility and appropriateness of different alternatives include:

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- Demonstrated ability to provide passage for adult and juvenile salmonids through an appropriate flow range and site conditions
- Ability to provide for safe downstream passage of smolts and steelhead kelts
- Acceptability of approach to regulatory agencies
- Continued ability to efficiently operate water diversion facility and streamflow gauging station
- Operation and maintenance requirements
- Ability to pass sediment and debris
- Potential geomorphic and habitat impacts to adjacent upstream and downstream channel reaches
- Construction feasibility, risk, and associated costs
- Flood effects, durability and longevity

2.9 Preparation of Alternatives Analysis Technical Memorandum

An Alternatives Analysis Technical Memorandum will be prepared that summarizes the activities, findings, and recommendations from Task 2. The Alternatives Analysis Technical Memorandum will provide a description of project constraints and limitations, a summary of existing hydraulic, biological, geomorphic and fish passage conditions, recommendations and rationale for fish migration design flows, an estimation of the 100-year peak flow, and descriptions of the developed alternatives for each site along with findings from the alternatives analysis and recommendations for preferred alternatives. The Alternatives Analysis Technical Memorandum will also include schematic drawings in plan, profile, and section for of each alternative.

Task 2 Deliverables

Task 2 deliverables will consist of (1) the Geotechnical Report and (2) the Alternatives Analysis Technical Memorandum. The Geotechnical Report will summarize findings from the Geotechnical Evaluation (Task 2.3) and provide design recommendations based on findings. The Geotechnical Report and Technical Memorandum will be submitted to the Client for review and comment. The Consultant will provide 4 hard-copies and one PDF electronic file. Client's written comments will be reviewed by Consultant with responses incorporated into a final memorandum. Four hard-copies and one PDF electronic file of the final memorandum will be submitted to the Client.

During each review phase the Client can choose to have multiple parties review the submitted materials. However, the Client shall return only one set of reviewed materials to the Consultant with clearly marked comments made with red or blue pencil or ink. It is the Client's responsibility to resolve any potentially contradictory reviewer requests and to provide one set of comments back to the Consultant that provides clear direction as to how the Client wants the project to proceed.

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Auburn Ravine Fish Passage Restoration

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TASK 3 – FISH PASSAGE DESIGN REPORT

The following are key subtasks associated with producing the Fish Passage Design Report for the project and the 30% design drawings. This work will be based on the selected preferred designs for each of the project sites and the comments and recommendations received from the Client and stakeholders' review of the Alternatives Analysis Technical Memorandum.

3.1 Design Refinement for Preferred Fish Passage Design Alternatives

From comments received from the Alternatives Analysis Technical Memorandum and the selection of the preferred alternative for the two sites by the Client, the Consultant will further refine the design of the preferred alternatives to the 30% design level. This is expected to include further hydraulic and geomorphic analysis of the designs to develop the design gradation of the stable rock mixture, calculation of potential scour depths, and finalization of the hydraulic models for fish passage flows and the 100-year peak flow.

3.2 Preparation of 30% Design Drawings

The design drawings will be completed to the 30% design level and will include a topographic base map showing the designs in plan view, typical cross sections, and the channel design profile. The drawings will be prepared in AutoCAD utilizing Consultant's drafting standards in an 11" x 17" format.

3.3 Preparation of the Fish Passage Design Report

A Fish Passage Design Report will be prepared that will include the following elements:

- A detailed project site description, including objectives and constraints;
- A characterization of the types, functions, and values provided by habitats at the site (a summary of existing conditions based on assessments made in Task 2);
- A list of fish passage goals, including target species and types and quantity of potential habitat to be accessed, enhanced, or created and their functions and values
- A summary of projected post-implementation conditions; including anticipated fish passage performance of facilities, with description of analysis and development process.
- Descriptions of proposed fish passage design within the project area for implementation. These will be described briefly in text and shown on corresponding design drawing sheets, including:
 - Site access and staging areas
 - Dewatering and diversions
 - Site preparation and protection measures
 - Grading plans
 - Erosion and sediment control
 - Habitat structure details

The Fish Passage Design Report will be accompanied by the 30% design drawings. The Final Report is intended to provide sufficient project description to begin preparation of

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CEQA related documents (TASK 5) and will be used for regulatory permitting (TASK 6).

Task 3 Deliverables

Task 3 deliverables will consist of the Fish Passage Design Report with 30% design drawings in 11" x 17" format. A draft of the Design Report will be prepared and four hard-copies and one PDF electronic file of the draft will be submitted to the Client for comment. Client's written comments will be reviewed by Consultant with responses incorporated into a final report. Four hard-copies and one PDF electronic file of the final report will be submitted to the Client.

TASK 4 – DESIGN PLANS AND SPECIFICATIONS

Consultant will prepare construction plans, specifications, and opinion of probable construction costs (estimate) sometimes referred to as a PS&E package for the Client based on the selection of the preferred alternative to be developed from Task 2. The fish passage structure designs will include standard plans, profiles, and detail sheets necessary to convey the design intent of the new fish passage structures, as well as ancillary engineering elements, such as minor modifications to the NID Gauging Station or Hemphill Dam, temporary water control during construction, utilities, re-vegetation of disturbed areas, and erosion control notes. No major changes to the existing structures are anticipated or included in this scope.

The plans for the NID Gauging Station and the Hemphill Dam site are anticipated to include a title sheet, abbreviation and legend sheet, demolition sheet showing water control details, a civil site sheet, profile sheet, cross section sheet, detail sheet(s), and a re-vegetation and erosion control sheet.

The project design work shall be completed based on CDFG design guidelines. This project shall be designed in standard English units. Consultant will provide specifications in Construction Specification Institute (CSI) format. Consultant will utilize AutoCAD 2006 software with Consultant's drafting standards, including project folder structures, layer names, line styles and font styles, etc.

Design review submittals will be made at the 60%, 90%, and 100% completion stages. Consultant will conduct an in-house QA/QC review of each submittal prior to sending the submittal to the County for review. Specifications and opinions of probable construction costs will be included with the drawings for each of the three submittals.

Task 4 Deliverables

Task 4 deliverables will consist of four (4) sets of complete PSE packages at the 60%, 90% and 100% stages to the Client.

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TASK 5 – CEQA ENVIRONMENTAL REVIEW

Consultant will prepare CEQA documentation for the fish passage structure work at the NID Gauging Station and Hemphill Dam sites. Our scope and fee proposal is based on the projects qualifying for a Categorical Exemption (CE) under Section 15301 of the CEQA Guidelines as “operating, repair, maintenance, or minor alteration of existing structures or facilities not expanding existing uses.” Under this assumption, Consultant will prepare one CE for the two sites. While it is our opinion that the project may qualify for a CE, if the project does not qualify and a Mitigated Negative Declaration (MND) is requested or required, additional effort and fee outside the scope of this proposal will be required. It is our understanding that no Federal funds will be utilized on this project, however, if they are, NEPA documentation may then be required. Our scope and fee proposal does not include any NEPA documentation or related preparation.

We will also complete informal consultations with USFWS/NMFS/SHPO to receive feedback that will be needed for other permitting agencies (USACE and CEQA Lead Agency).

Task 5 Deliverables

Task 5 deliverables will consist of four (4) copies of the Categorical Exemption submitted to the Client. The Client will be responsible for all subsequent actions such as reviewing, adopting, and filing the CEQA documentation as necessary. The Client is also responsible for paying any required filing fees.

TASK 6 – REGULATORY PERMITTING

Consultant will perform regulatory compliance planning in conjunction with the Client and other appropriate regulatory agencies. Consultant’s approach for assisting the Client with their need to obtain project permits that may be required for the Auburn Ravine project will consist of four primary steps:

- A. Develop a detailed project description.** This step compiles required project information to determine what permitting is required for the project. Required information includes: a description of the project location; an inventory of property ownership and easements; a preliminary identification of project restoration activities and a corresponding description (e.g., access and staging areas, vegetation removal, water diversion and dewatering, excavation and grading, stockpiling, proposed revegetation, and proposed monitoring). Portions of these subtasks will be completed as portions of TASKS 2 through 4 and will be expanded as needed to provide a detailed project description.
- B. Scoping Session with Agencies.** Based on the information assembled in Step 6-A, a scoping session will be held with affected regulatory agencies to determine whether specific surveys or studies are needed, as well as determine what the agencies may require to adequately describe the project’s environmental setting. Our scope and fee proposal does not include preparing any biological assessments, conducting any special species surveys, archeological/historical

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surveys, nor any other special studies or surveys that could be requested by a regulatory agency.

- C. Planning.** Following the scoping session with agencies, a regulatory constraint analysis will be performed as required and a compliance strategy developed (via recommended design modifications, if necessary). The desired outcome from this step is for all parties (project proponent, client, landowners) to have mutual agreement on the final project description.

- D. Regulatory Compliance.** Consultant will prepare the following environmental documents and permit applications for review and submittal by the Client. The Consultant may proceed with the following tracks concurrently:
 - 1. Completing informal consultations with USFWS/NMFS/SHPO to receive feedback that will be needed for other permitting agencies (USACE and CEQA Lead Agency).

 - 2. Preparing and providing permit applications to the Client for their review, approval, and submittal per each agency's administrative rules. Consultant will prepare the following permit applications: U.S. Army Corps of Engineers 404; California Department of Fish and Game 1600, Central Valley Regional Water Quality Control Board 401.

In addition to preparing documents, Consultant will provide limited and reasonable communications with regulatory agencies after the Client submits the project permits to answer questions to help the permit review process proceed without unnecessary delays.

Task 6 Deliverables

Task 6 deliverable will consist of two (2) copies of a draft Regulatory Permit package, including applications and supporting documentation to the Client. Client comments on the draft submittals will be incorporated and two (2) copies of the final Regulatory Permit package will be submitted to the County. The Client is responsible for reviewing and signing the project permits, paying any required permit fees, and submitting the permit application packages.

BUDGET

Consultant will perform the above tasks on a time and material basis and in accordance with the provisions of Consultant's standard fee schedule not to exceed \$259,733. An approximate estimated breakdown of effort by task follows:

Task 1 – Project Management -	\$ 30,780
Task 2 – Design Development -	\$105,806
Task 3 – Fish Passage Design Report -	\$ 14,671

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Task 4 – Design Plans and Specifications -	\$ 77,964
Task 5 – CEQA Environmental Review -	\$ 7,778
<u>Task 6 – Regulatory Permitting -</u>	<u>\$ 22,734</u>
TOTAL	\$259,733

SCHEDULE

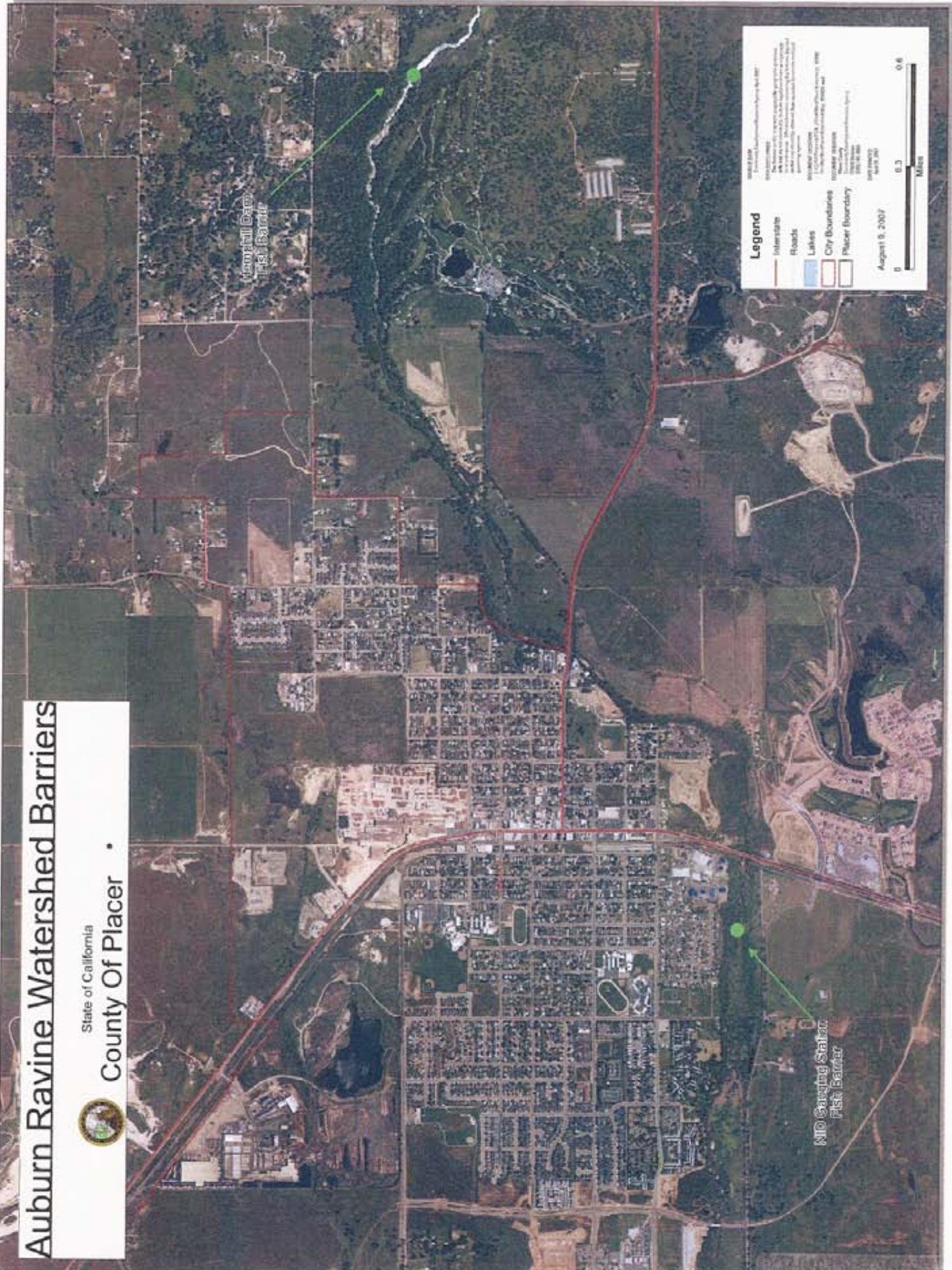
- The kick-off meeting will be held within 30 days of a signed contract
- Complete Task 2 within 120 days of the kick-off meeting
- Complete Task 3 within 90 days of receiving comments from the Task 2 and selection of preferred alternatives by the Client
- The remaining tasks will be conducted concurrently, starting after a preferred alternative is chosen from the Fish Passage Design Report. All work will be completed by August 2008.

Auburn Ravine Watershed Barriers

State of California



County Of Placer



Legend

- Interstate
- Roads
- Lakes
- City Boundaries
- Placer Boundary

August 9, 2007

0 0.3 0.6 Miles

M/D Graveling Station
Fish Barrier

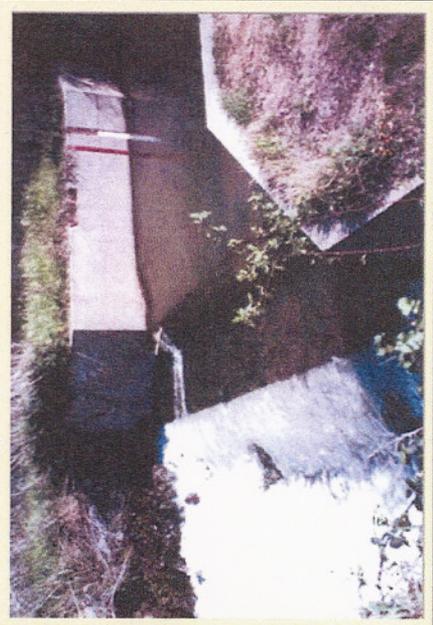
Wentworth Canyon
Fish Barrier

NID Gauging Station Fish Barrier

State of California
County Of Placer



NID Gauging Station Fish Barrier



Legend

- Roads
- Lakes
- City Boundaries
- Placer Boundary

DOCUMENT LOCKDOWN
City of Placer, California, PMS
Working Draft - Not for Construction

DOCUMENT CREATION
Placer County, Department of Planning
TJBT/DBS
03/14/2008

DATE PRINTED:
August 9, 2007
April 18, 2007

0 100 200
Feet

SOURCE DATA:
Community Development Department Agency, April 2007

DATA SOURCE (AERIAL): The map was prepared by using aerial photography and was not intended to provide high accuracy. It is provided for informational purposes only. The City of Placer does not warrant the accuracy of the information shown on this map and does not accept any liability for errors or omissions in the data. The City of Placer does not accept any liability for errors or omissions in the data.

Hemphill Dam Fish Barrier

State of California

County Of Placer •



Hemphill Dam Fish Barrier



Legend

- Interstate
- Highway
- City Boundaries
- Place Boundary
- Roads
- Lakes
- City Boundaries
- Place Boundary

August 8, 2017

0 100 200 Feet

Exhibit C Fish Passage Improvements

NID Gauging Station

Located directly downstream of State Route 65 in the City of Lincoln, this flume type structure is owned and maintained by NID to monitor flow in Auburn Ravine. The structure is a full channel width concrete section that forms a broad flume with vertical sides, an upward-sloping approach, and a level crest with an ogee shape descending to a horizontal apron which spills onto large boulders to dissipate energy and prevent undermining. The flume and crest section is 25 ft wide, with flaring upstream and downstream sidewalls.

Erosion at the downstream end of the flume has been severe resulting in approximately 5 to 6 ft of incision and forming a barrier to upstream anadromous fish migration. A ramp of riprap has been place against the downstream end of the flume to help control erosion, however, the shallow flow depth during low flow conditions and the high velocity and turbulence over the riprap ramp create an even more significant barrier for migrating fish.

Comments made by the California Department of Fish and Game (CDFG) indicated that the preferred alternative for the NID Dam site would be a channel re-grade using boulder weirs that span the entire channel and replace the existing concrete section. Although relatively new, this structure is well tested, and provides good passage conditions for both adult and juvenile anadromous fishes under a very wide range of flow.



Hemphill Dam

Located within the Turkey Creek Golf Course approximately 1.5 miles upstream of the State Route 193 crossing, this structure is a relatively large seasonal flashboard dam on a slightly modified reach of Auburn Ravine in the low elevation foothills of the watershed. The trapezoidal dam abutments are about 8 ft high and 64 ft apart, connected by an elevated horizontal concrete sill. A relatively smooth gunnited rubble apron slopes downstream from the concrete sill to a plunge pool filled with large angular boulders for energy dissipation. The Hemphill Dam creates a barrier for upstream-migrating anadromous fish at all but very high stream flows when the entire structure becomes drowned out and swim-over conditions would be present. Alternative approaches to solve the problem are similar to those for the NID Gauging Station. The conceptual design, as with the Gauging Station, will need to be refined in order to accommodate the requirements by the CDFG for project approval.

