

Categorical Exclusion

(Version: FEB06)

Compliance Tracking Number: 2006-042

PEPC Project Number: 15091

A. PROJECT INFORMATION

Title: Tuolumne River Permanent River Gage Installation above Hetch Hetchy Reservoir

Location: Hetch Hetchy, Tuolumne County, California

Project Manager: Jim Roche, Resources Management and Science, Yosemite National Park

Project Manager: Clint Nagel, U.S. Geological Survey

B. COMPLIANCE DETERMINATION

This project is an action that has been determined to result in no measurable environmental effects. It is therefore categorically excluded from further National Environmental Policy Act analysis under Categorical Exclusion: DO12 3.4 E (6) - *Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research, and monitoring activities.*

Necessary compliance coordination has been completed regarding the National Historic Preservation Act, the Wilderness Act, the Wild and Scenic Rivers Act, and the Endangered Species Act, as applicable. Environmental impacts will be minor or less when the project is implemented with the conditions stipulated under **Project Mitigations and Conditions** in **Section I** at the end of the attached *Environmental Screening Form*.

Additional supporting information for this determination and the stipulated conditions can be found in the following attachments (when checked):

- Cultural Resource Effects Assessment Form (XXX)*
- Wilderness Minimum Requirement Analysis*
- Wild and Scenic River Section 7 Determination*
- Park Management Terms and Conditions*
- Other:

C. DECISION

On the basis of the environmental impact information in the statutory compliance file, with which I am familiar, I am categorically excluding the described project from further NEPA analysis. No exceptional circumstances or conditions in DO12 3.5 or 3.6 apply and the action is fully described in DO12, Section 3.4.

//R. Kevin Cann, Acting//

Michael J. Tollefson

6-19-06

Date

Original: Statutory Compliance File
cc: Project Proponent

Attachments (4)

*The signed original of this document is on file at
the Environmental Planning and Compliance
Office in Yosemite National Park.*



United States Department of the Interior

NATIONAL PARK SERVICE

Yosemite National Park
P.O. Box 577
Yosemite, California 95389

IN REPLY REFER TO:
L7617 (YOSE-PM)

Memorandum

To: Jim Roche, Project Manager, Resources Management and Science, Yosemite National Park
Clint Nagel, Project Manager, U.S. Geological Survey

From: Superintendent, Yosemite National Park

Subject: Notice to Proceed, 2006-042 Tuolumne River Permanent River Gage Installation above
Hetch Hetchy Reservoir (15091)

Your proposed project is an action that has been determined to result in no measurable environmental effects. It is therefore categorically excluded from further National Environmental Policy Act analysis under Categorical Exclusion: DO12 3.4 *E (6) - Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research, and monitoring activities.*

Necessary compliance coordination has been completed regarding the National Historic Preservation Act, the Wilderness Act, the Wild and Scenic Rivers Act, and the Endangered Species Act, as applicable. This project clearance is valid providing that you adhere to the conditions stipulated in the enclosed *Categorical Exclusion Form* and associated documents when implementing this project.

//R. Kevin Cann, Acting//
Michael J. Tollefson

6-19-06

Date

Enclosure (with attachments)

cc: Statutory Compliance File

*The signed original of this document is on file at
the Environmental Planning and Compliance
Office in Yosemite National Park.*

Environmental Screening Form

(Version: FEB06)

Compliance Tracking Number: 2006-042

PEPC Project Number: 15091

A. PROJECT INFORMATION

Title: Tuolumne River Permanent River Gage Installation above Hetch Hetchy Reservoir

Location: Hetch Hetchy, Tuolumne County, California

Project Manager: Jim Roche, Resources Management and Science, Yosemite National Park

Project Manager: Clint Nagel, U.S. Geological Survey

B. PROJECT DESCRIPTION AND BACKGROUND

The California District Office of the United States Geological Survey (USGS) funded by the San Francisco Public Utility Commission proposes to install and maintain a river gage on the Tuolumne River approximately 300 feet upstream of the high-water line on Hetch Hetchy Reservoir. A portion of this project will take place within the bed and banks of the river and the installation is intended to be long term, for all intents and purposes permanent. The project location is 37.91667 degrees N and 119.65667 degrees W, North American Datum 1927. The gage would be installed in August or September of 2006, during low water on the river.

The installation would consist of a weather proof instrument box (approximately 2 feet high by 3 feet wide by 2 feet deep) mounted to a 3-4 foot high metal stand that would be bolted to bedrock using four ½ inch diameter holes (Figure 1). The actual location of this gage house would be determined at the time of installation but would be above the high-water marks of prior events. A 1.5-2 inch PVC line or a 1-inch galvanized pipe will extend from the gage house approximately 100 feet to the river. The conduit would contain cabling for the depth, temperature, conductivity, and turbidity sensors and will be secured using 4-6 tie-downs bolted to the rock. The line would be concealed as much as possible without trenching by following the contour of the land surface and/or open joints. The line would terminate in the river channel and would be bolted to the bottom of the river bed. A series of three staff plates (ruled vertical signs necessary for the measurement of river stage) would be tiered from the water's edge up to the gage house. Plates would be mounted in the rock using two ¾ inch holes backfilled with pour-rock. The lowest staff plate would be close to the river's edge and in the channel. Crest-stage gages, which consist of 4 foot long 2-inch galvanized vertical pipe with a stick running the length of the pipe would be installed on the two upper staff plates to verify peak flows as measured by instrumentation. A total of up to 20 holes would be drilled into bedrock. A solar panel (36 inches by 24 inches) would be mounted on a pole attached to the gage housing and be positioned up to 5 feet above the structure as necessary to obtain a clear view of the southern sky. A satellite antenna (approximately 48 inches in length by 10 inches in diameter) would be installed to transmit data on a near real time basis. Data to be collected by this installation would include river stage, temperature, specific conductivity, and turbidity.

Projected crew during construction would be four people over 3-4 days. Access would be by boat provided by Hetch Hetchy personnel. An effort would be made to construct or fabricate as much of the shelter and hardware prior to installation, thereby lessening the need for

intensive use of heavy equipment. Motorized equipment required for installation includes a generator and a hammer drill.

After construction, maintenance of the site would require monthly visits by one or two USGS personnel with a boat operator from Hetch Hetchy Reservoir. Visits would entail servicing equipment inside the gage house plus wading the river to make flow measurements.

Table B1 – Background Information

	Yes	No	N/A	Explanation/Notes
1. Did NPS staff conduct a site visit? If yes, list attendees. If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RM&S staff with USGS staff.
2a. Is the project providing compliance for an action associated with but not covered by an approved plan? (Identify the plan and provide a section or page citation.); OR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2b. Is the project in an approved plan? (Identify the plan and provide a section or page citation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2c. Is the project consistent with that plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2d. Is the Plan's CE, FONSI, or ROD current?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3a. Are there any interested or affected parties?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3b. Has a diligent effort been made to communicate with them?	<input type="checkbox"/>			
4a. Are there any affected agencies or tribes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4b. Has consultation been completed?	<input type="checkbox"/>			

Table B2 – Environmental Screening Form Attachments (provide Attachment letter—A, B, etc.)

	Yes	No	N/A	Explanation/Notes
1. Maps: 2 required (vicinity map & site map)	<input checked="" type="checkbox"/>			Regional & vicinity maps; see Attachment A.
2. Drawings (e.g., design, construction)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Site Plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Schematic of developed gage site; see Attachment B.
4. Photographs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proposed instrument house and approximate installation site; see Attachment C.
5. Non-NEPA/NHPA Approvals (Explain)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Other (Explain)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

C. ASSESSMENT OF POTENTIAL RESOURCE EFFECTS

Are any impacts possible on the following resources?	Yes	No	N/A	Data Needed to Determine/Notes
1. Geologic resources: soils, bedrock, streambeds, etc	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Negligible; approximately 25 to 30 1/2" to 3/4" holes would be drilled into bedrock to anchor instruments.
2. From geohazards	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Air quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Soundscapes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Negligible; noise from a hammer drill used during installation.
5. Water quality or quantity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Stream flow characteristics	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Marine or estuarine resources	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. Floodplains or wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Land use, including occupancy, income, values, ownership, type of use	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10. Rare or unusual vegetation – old growth timber, riparian, alpine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Species of special concern (plant or animal; state or federal listed or proposed for listing) or their habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Unique ecosystems, biosphere reserves, World Heritage Sites	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Yosemite National Park is a World Heritage Site; no historic properties would be adversely affected; see Section F, National Historic Preservation Act Checklist and attached XXX.
13. Unique or important wildlife or wildlife habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
14. Unique or important fish or fish habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
15. Introduce or promote non-native species (plant or animal)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mitigated; see Condition 1, below.
16. Recreation resources, including supply, demand, visitation, activities, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
17. Visitor experience, aesthetic resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Negligible; the river gage and staff would be a visual intrusion; however the site is remote, very seldom visited, and not visible from any frequented location.
18. Cultural resources including cultural landscapes, ethnographic resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Negligible; the assessment of effect is "No Effect;" see Section F, National Historic Preservation Act Checklist and attached XXX.
19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
20. Minority and low income populations, ethnography, size, migration patterns, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
21. Energy resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
22. Other agency or tribal land use plans or policies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
23. Resource, including energy, conservation potential	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
24. Urban quality, gateway communities, etc.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
25. Long-term management of resources or land/resource productivity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	This gage would assist in the long-term management of Tuolumne River water resources.
26. Other important environment resources (e.g. geothermal, paleontological resources)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Comments, Mitigations and Conditions:

- All equipment, materials, and instruments brought to the site from outside the park must be thoroughly cleared of any foreign debris that could harbor plant or animal propagules.

D. MANDATORY CRITERIA

If implemented, would the proposed action:	Yes	No	N/A	Data Needed to Determine/Notes
1. Have material adverse effects on public health or safety?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Have adverse effects on such unique characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands; floodplains; or ecologically significant or critical areas, including those listed on the National Register of Natural Landmarks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The assessment of effect is "No Effect;" see Section F, National Historic Preservation Act Checklist and attached XXX.
3. Have highly controversial environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Be directly related to other actions with individually insignificant, but cumulatively significant, environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. Have adverse effects on properties listed or eligible for listing on the National Register of Historic Places?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The assessment of effect is "No Effect;" see Section F, National Historic Preservation Act Checklist and attached XXX.
8. Have adverse effects on species listed or proposed to be listed on the List of Endangered or Threatened Species or have adverse effects on designated Critical Habitat for these species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Require compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10. Threaten to violate a federal, state, local, or tribal law or requirement imposed for the protection of the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Involve unresolved conflicts concerning alternative uses of available resources (NEPA sec. 102(2)(E))?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
12. Have a disproportionate, significant adverse effect on low-income or minority populations (EO 12898)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. Restrict access to and ceremonial use of Indian sacred sites by Indian religious practitioners or adversely affect the physical integrity of such sacred sites (EO 130007)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
14. Contribute to the introduction, continued existence, or spread of federally listed noxious weeds (Federal Noxious Weed Control Act)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mitigated; see condition 1, below.
15. Contribute to the introduction, continued existence, or spread of non-native invasive species or actions that may promote the introduction, growth or expansion of the range of non-native invasive species (EO 13112)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mitigated; see condition 1, below.
16. Require a permit from a federal, state, or local agency to proceed, unless the agency from which the permit is required agrees that a CE is appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
17. Have the potential for significant impact as indicated by a federal, state, or local agency or Indian tribe?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
18. Have the potential to be controversial because of disagreement over possible environmental effects?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
19. Have the potential to violate the NPS Organic Act by impairing park resources or values?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Comments, Mitigations and Conditions:

- All equipment, materials, and instruments brought to the site from outside the park must be thoroughly cleared of any foreign debris that could harbor plant or animal propagules.

E. SPECIAL STATUS SPECIES CHECKLIST

Within the area of potential effect, are there:	Yes	No	N/A	Data Needed to Determine/Notes
1. Listed or proposed threatened or endangered species (Federal or State)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Telephone conversation with park Botanist, Lisa Acree.
2. Species of special concern (Federal or State)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Park rare plants or vegetation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Potential habitat for any special-status species listed above?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

If "yes" to any of the above questions, a Special-Status Species Checklist must be completed and attached.

Comments, Mitigations and Conditions:

- None

F. NATIONAL HISTORIC PRESERVATION ACT CHECKLIST

Within the area of potential effect:	Yes	No	N/A	Data Needed to Determine/Notes
1. Will there be ground disturbance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Only drilling holes in bedrock; the assessment of effect is "No Effect;" see attached XXX.
2. Are there any archeological sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Are there any Native American Indian traditional cultural resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Is the project within the boundary of an archeological or historic landscape or district?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5a. Is there a National Historic Landmark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5b. Is there a structure(s) on the park's <i>List of Classified Structures</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5c. Is there a historic property with a DOE and concurrence by the SHPO or a completed National Register form?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5d. Is there a cultural property requiring review under NHPA, Section 106?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Would there be alteration of a structure or cultural landscape covered by 5a-d, above?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

If "yes" to any of the above, then an Assessment of Effects form (YOSE-XXX) must be completed and attached.

Mitigations and Conditions:

- None

G. WILDERNESS ACT CHECKLIST

Is the proposed project:	Yes	No	N/A	Data Needed to Determine/Notes
1. Within designated Wilderness?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Negligible; see Conditions 1-6, below, and the attached Wilderness MRA.
2. Within a Potential Wilderness Addition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

If "yes" to either of the above, then a Wilderness Minimum Requirements Analysis must be completed and attached.

Mitigations and Conditions:

- Transportation of equipment and personnel to the sites would be on foot from boat access on Hetch Hetchy Reservoir.
- Overnight camping during installation would adhere to Wilderness regulations.
- All conduit would be gray or black in color. Conduit would be installed on the ground surface using vegetation, topography, and joints in the bedrock to conceal its location.
- The sealed box for the battery and logging equipment would be painted a dark matte-gray or other suitable camouflage color.
- The solar panel and satellite antenna would be mounted to the gage house structure.
- When this gage is no longer being used, the USGS or City of San Francisco shall be responsible for removal of equipment and restoration of the site.

H. WILD AND SCENIC RIVERS ACT CHECKLIST

Does the proposed project:	Yes	No	N/A	Data Needed to Determine/Notes
1. Fall within a wild and scenic river corridor? If 'yes', name the river(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tuolumne River
2. Fall within the bed and banks AND affect the free-flow of the river?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Potentially affect water quality of the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Remain consistent with its river segment classification?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A river management plan has not been completed for the Tuolumne River; the likely classification would be Wilderness; research and monitoring, consistent with the Wilderness Minimum Requirement Analysis would be consistent with this probable classification.
5. Protect and enhance river ORVs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A river management plan has not been completed for the Tuolumne River; hence no ORVs have been determined for the river; a scientific ORV is likely; installation and operation of a river monitoring gage would protect and enhance a scientific ORV.
6a. Fall within the River Protection Overlay?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A river management plan has not been completed for the Tuolumne River; hence no RPO has been determined for the river.
6b. If "yes", is it consistent with conditions of the River Protection Overlay?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Installation and operation of a river monitoring gage would be consistent with with an RPO, should one be established for the Tuolumne River.
7. Remain consistent with the areas Management Zoning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A river management plan has not been completed for the Tuolumne River; hence no management zoning has been determined for the river; the likely management zone would be "Wilderness," to match the area's current designation as Wilderness; installation and operation of a river monitoring gage would be consistent with a management zoning of "Wilderness;" see the attached Wilderness Minimum Requirement Analysis.
8a. Fall on a tributary of a Wild and Scenic River?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8b. If 9a is "yes", will the project affect the Wild and Scenic River corridor?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8c. If 9a is "yes", will the project unreasonably diminish scenic, recreational, or fish and wildlife values?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If "yes" to questions 2, 9b, or 9c, then a WSRA Section 7 determination must be completed and attached.				

Mitigations and Conditions:

- See Section G, Wilderness Act Checklist, above, and the attached Wilderness Minimum Requirement Analysis.

I. NEPA Analysis and Approval Conditions

When implemented as detailed in the project description and following all Project Mitigations and Conditions listed below, this project meets the terms and conditions of a categorical exclusion to NEPA.

Applicable Categorical Exclusion:

DO12 E (6) - *Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research, and monitoring activities.*

Project Mitigations and Conditions:

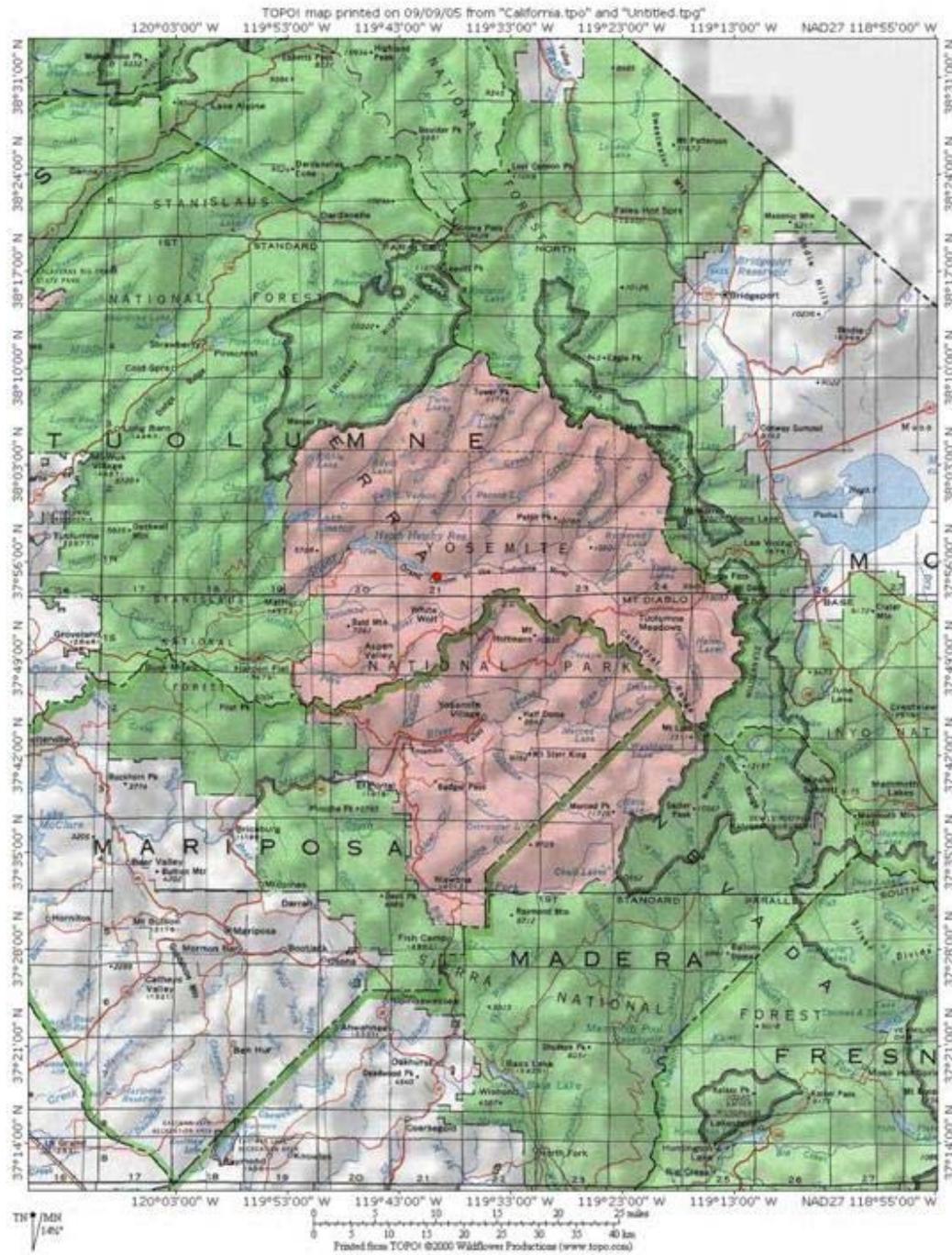
1. **Transportation of equipment and personnel to the sites would be on foot from boat access on Hetch Hetchy Reservoir. (Wilderness Office)**
2. **Overnight camping during installation would adhere to Wilderness regulations. (Wilderness Office)**
3. **All conduit would be gray or black in color. Conduit would be installed on the ground surface using vegetation, topography, and joints in the bedrock to conceal its location. (Wilderness Office)**
4. **The sealed box for the battery and logging equipment would be painted a dark matte-gray or other suitable camouflage color. (Wilderness Office)**
5. **The solar panel and satellite antenna would be mounted to the gage house structure. (Wilderness Office)**
6. **When this gage is no longer being used, the USGS or City of San Francisco shall be responsible for removal of equipment and restoration of the site. (Wilderness Office)**
7. **Find an existing agreement with the US Geological Survey, or develop a new one, that would delineate the parties' responsibilities for the maintenance and removal of the river gage. (Management Team)**

This project has been reviewed in accordance with the above criteria and it has been determined that the project will result in no or minimal environmental effects. Therefore, it is categorically excluded from further environmental review required under the National Environmental Policy Act. Additionally, the necessary compliance coordination has been completed with regard to the National Historic Preservation Act, the Wilderness Act, the Wild and Scenic Rivers Act, and the Endangered Species Act.

<i>//GW Colliver//</i>	6/5/06
Compliance Specialist	Date
<i>//Mark A Butler//</i>	6/5/06
Compliance Program Manager	Date
<i>//Bill Delaney//</i>	6/13/06
Chief, Project Management	Date

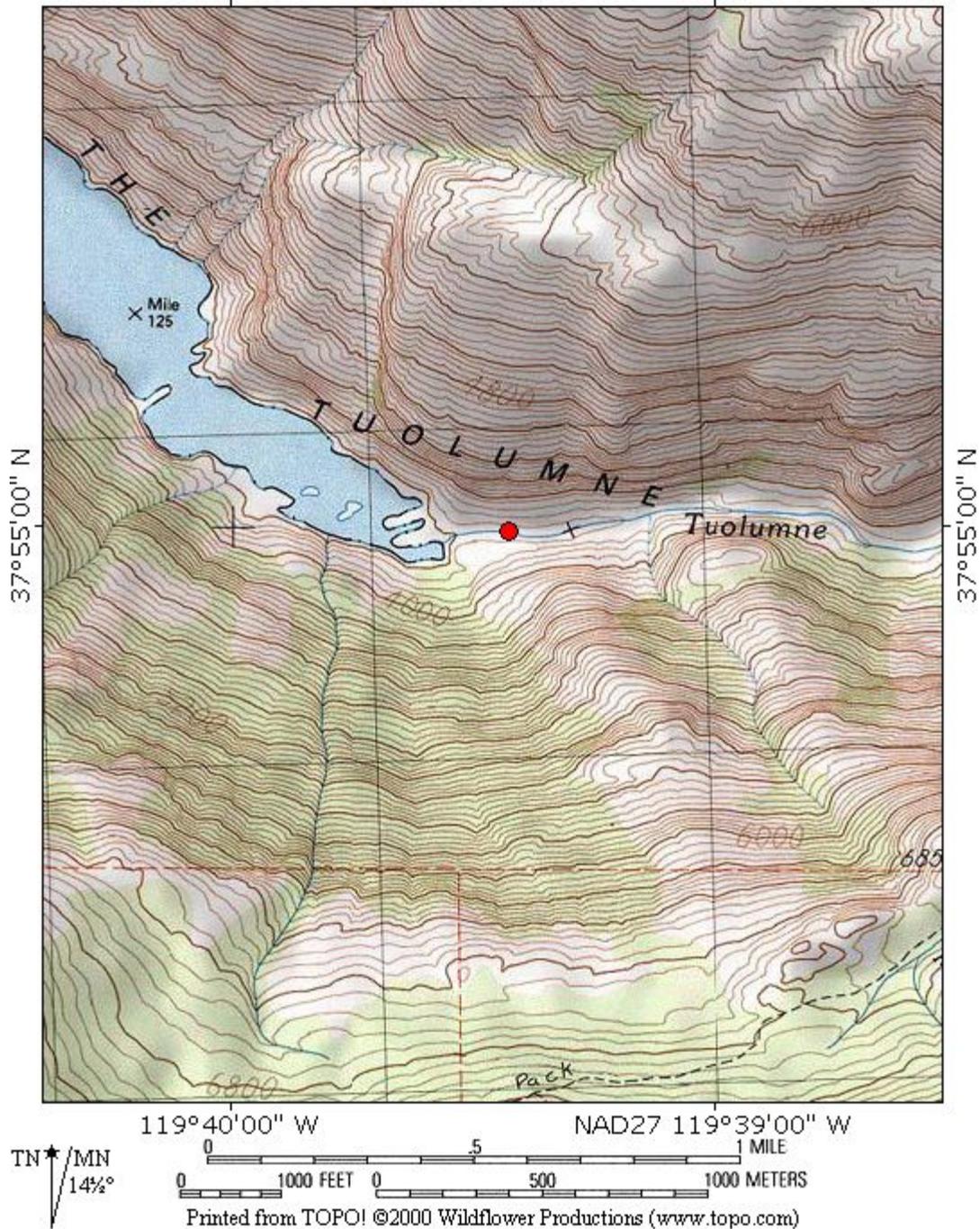
The signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park.

Attachment A



Map 1 Vicinity Map - Permanent Tuolumne River Monitoring Gage Installation

TOPO! map printed on 09/08/05 from "California.tpo" and "Untitled.tpg"
119°40'00" W NAD27 119°39'00" W



Map 2 Site Map - Permanent Tuolumne River Monitoring Gage Installation

Attachment B

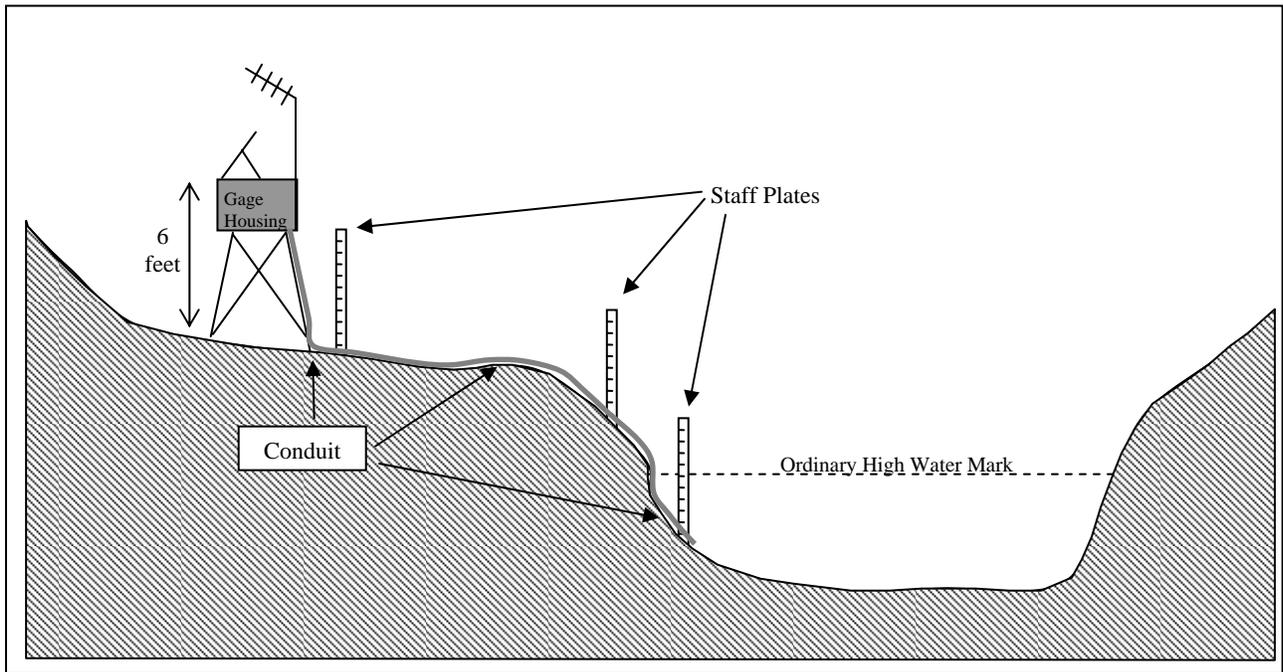


Figure 1 Tuolumne River Cross-Section at Location of Proposed USGS River Gage above Hetch Hetchy Reservoir

Attachment C



Photo 1 Proposed Gage Enclosure Style



Photo 2 Proposed Installation Site for Permanent River Monitoring Gage

Preservation Assessment Form (YOSE XXX)

(Version: FEB06)

Compliance Tracking Number: 2006-042

PEPC Project Number: 15091

A. DESCRIPTION OF UNDERTAKING

Title: Tuolumne River, Installation of a Permanent River Gage about Hetch Hetchy Reservoir

Project Location and Area of Potential Effect:

Tuolumne Rive, Hetch Hetchy Reservoir, Tuolumne County, California

Wilderness view plane/ landscape

Project Manager: Jim Roche, Resources Management Science, Yosemite National Park

Project Manager:

Project Description: This project involves the installation of a U.S. Geological Survey river gage on the Tuolumne River approximately 300 feet upstream of Hetch Hetchy Reservoir. This gage will record and transmit in real time the flow rate, temperature, turbidity, and conductivity. The project is funded through the San Francisco Public Utilities Commission.

The actual installation would consist of a weather proof instrument box (approximately 2 feet high by 3 feet wide by 2 feet deep) mounted to a 3-4 foot high metal stand that would be bolted to bedrock using four ½ inch diameter holes. The exact location of the gage house would be determined at the time of installation based on the elevation of high-water marks of prior events and terrain suitability. A 1.5-2 inch PVC line or a 1 inch galvanized pipe will extend from the gage house approximately 100 feet to the water's edge. The conduit would contain cabling for the depth, temperature, conductivity, and turbidity sensors and will be secured using 4-6 tie-downs bolted to the rock. The line would be concealed as much as possible without trenching by following the contour of the land surface and/or open joints in the rock. A series of three staff plates (ruled vertical signs necessary for the measurement of river level) would be tiered from the water's edge up to the gage house. Plates would be mounted in the rock using two ¾ inch holes backfilled with pour-rock cement. Crest-stage gages, which consists of 4 foot long 2-inch galvanized vertical pipe with a stick running the length of the pipe would be installed on the two upper staff plates to verify peak flows as measured by instrumentation. A total of up to 20 holes would be drilled into bedrock. A solar panel (approximately 36 inches by 24 inches) would be installed to power monitoring and satellite telemetry equipment. It would be mounted on a pole attached to the gage housing and be positioned up to 5 feet above the structure as necessary to obtain a clear view of the southern sky. A satellite antenna (approximately 48 inches in length by 10 inches in diameter) would be installed to transmit data on a near real time basis.

Projected crew during construction would be four people over 3-4 days. Access would be by boat provided by Hetch Hetchy personnel. An effort would be made to construct or fabricate as much of the shelter and hardware prior to installation, thereby lessening the need for intensive use of heavy equipment. Motorized equipment required for installation includes a generator and a hammer drill.

1. Attached Sensitive Information**	Yes	No	Explanation/Source/Notes
a. Maps	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GIS CR map
b. Drawings	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c. Site Plans	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d. Photographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

e. Sample	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. List of Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Other (Explain)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**** Sensitive documents not for duplication or distribution beyond park management, subject matter experts, and the project statutory compliance file.**

B. DESCRIPTION OF EFFECTS

	Yes	No	N/A	Explanation/Notes
1. Has the Area of Potential Effect been surveyed to identify historic properties? If Yes, provide reference for the Survey (s).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	YOSE 1991 F
a. Would the proposed action affect a known historic property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

2. List all Historic Properties in the Area of Potential Effect:	Affected?		Explanation/Notes
	Yes	No	
a. None	<input type="checkbox"/>	<input type="checkbox"/>	
b.	<input type="checkbox"/>	<input type="checkbox"/>	
c.	<input type="checkbox"/>	<input type="checkbox"/>	

3. List resources in the Area of Potential Effect to which American Indians attach cultural and religious significance:	Affected?		Explanation/Notes
	Yes	No	
a. None	<input type="checkbox"/>	<input type="checkbox"/>	
b.	<input type="checkbox"/>	<input type="checkbox"/>	
c.	<input type="checkbox"/>	<input type="checkbox"/>	

4. The proposed action will:	Yes	No	N/A	Explanation/Note
• Destroy, remove, or alter features or elements from a historic structure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Replace historic features/elements in kind	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Add nonhistoric features/elements to a historic structure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Alter or remove features/elements of a historic setting or environment (including terrain)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Add nonhistoric features/elements (including visual, audible, or atmospheric) to a historic setting or cultural landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Disturb, destroy, or make archeological resources inaccessible, or alter associated terrain	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Disturb, destroy, or make ethnographic resources inaccessible, or alter associated terrain	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Begin or contribute to the deterioration of historic fabric, terrain, setting, landscape elements, or archeological or ethnographic resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Involve a real property transaction affecting historic cultural properties (i.e., the exchange, sale, or lease of land or structures)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Potentially affect presently unidentified historic resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Other	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

5. Describe any measures that are incorporated as part of this project that will be taken to prevent or minimize loss or impairment of prehistoric or historic fabric, setting, integrity, or data:

Checklist prepared by: Jeannette Simons

Date: 4/13/06

Title: Historic Preservation Officer

C. SPECIALIST SECTION

Specialists: Your comments here (or attached) show that you have reviewed this proposal for conformity with requirements of *National Historic Preservation Act, Section 106*; with the 1995 *Service-wide Programmatic Agreement* (if applicable); with applicable parts of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; with the *NPS Management Policies* and *Cultural Resource Management Guideline*; and have given your best professional advice about this project and the issues relevant to the Section 106 process, including identification and evaluation of historic properties and further consultation needs.

Archeologist

Name: **Laura Kirn**

Date: 4/12/06

Comments:

Ground Disturbance Involved Yes: No:

Assessment of Effect: "**No Effect**"

Recommended Conditions:

Signature of Archeologist: //Laura Kirn// (signed original on file)

Cultural Anthropologist

Name: **Sonny Montague**

Date:

Comments:

Assessment of Effect:

Recommended Conditions:

Signature of Cultural Anthropologist: _____

Curator

Name: **Jonathan Bayless**

Date: 4/12/06

Comments:

Assessment of Effect: "**No Effect**"

Recommended Conditions:

Signature of Curator: //John Bayless// (signed original on file)

Historian Name: **Charles Palmer** Date: 4/12/06

Comments:

Assessment of Effect: "**No Effect**"

Recommended Conditions:

Signature of Historian: //Charles Palmer// (signed original on file)

Historic Architect Name: **Sueann Brown** Date: 4/12/06

Comments:

Assessment of Effect: "**No Effect**"

Recommended Conditions:

Signature of Historic Architect: //Paul Chattey, Acting// (signed original on file)

Historic Landscape Architect Name: **Steven Torgerson** Date: 4/12/06

Comments:

Assessment of Effect: "**No Effect**"

Recommended Conditions: Check with the Historic Landscape Architect for final location and color options for box and other equipment.

Signature of Historic Landscape Architect: //Steven Torgerson// (signed original on file)

Preservation Specialist

Name: **Doug Martin**

Date: 4/12/06

Comments:

Assessment of Effect: "**No Effect**"

Recommended Conditions: Recommended Conditions

Signature of Preservation Specialist: //Doug Martin// (signed original on file)

Native American Liaison

Name: **Jeannette Simons**

Date:

Comments:

Assessment of Effect:

Recommended Conditions:

Signature of Native American Liaison: _____

**D. RESOURCES MANAGEMENT AND SCIENCE DIVISION AND PARK 106
COORDINATOR REVIEWS AND RECOMMENDATIONS**

- 1. Review by specialists:** The appropriate subject-matter experts have reviewed the project and entered their comments and recommendations in Section C, above.

The foregoing assessment is adequate: the proposed action is consistent with all applicable NPS management policies, standards, guidelines, or US DOI standards and guidelines, Rehabilitation of Historic Buildings, or others, and incorporates measures to avoid Adverse Effects.

Reviewed and Accepted by:

Signature: //Niki Stephanie Nicholas// **Date:** 4/12/06
Chief of Resources Management & Science Division

- 2. Assessment of Effects: No Effect**

- 3. Compliance Requirements:** The following is the park's assessment of Section 106 process needs and requirements for this undertaking.

Standard 36 CFR Part 800 Consultation

Consultation under 36 CFR is needed subsequent to the preparation of this form and its review by appropriate historic resource management advisors.

Undertaking related to the 1995 NPS Programmatic Agreement

The above action meets all conditions for a programmatic exclusion under Stipulation IV. A of the 1995 NPS programmatic agreement, and is listed in Stipulation IV. B, as:

<Choose Type of Undertaking>

Plan-Related Undertaking

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 1995 NPS programmatic agreement and 36 CFR Part 800.

Undertaking Related to Another Agreement

The proposed undertaking is covered for Section 106 purposes under a document such as a statewide agreement written in accordance with 37 CFR Part 800.7 or counterpart regulations.

Agreement: <Enter Agreement Information>

Flood-Recovery Related Undertaking

The proposed undertaking is covered for Section 106 purposes under the letter-based agreement between the NPS, the State Historic Preservation Office, and the Council for Historic Preservation for "Highwater 97" flood repair and recovery

Undertaking Related to the 1999 Yosemite Programmatic Agreement

The proposed undertaking is covered for Section 106 purposes under the park's 1999 programmatic agreement for planning, design, construction, operations and maintenance; the undertaking meets the stipulations identified in Article VII.C.2.

4. Project Stipulations and Conditions

Following are listed any stipulations or conditions necessary to ensure that the assessment of effects above is consistent with 36 CFR 800 criteria of effect or to mitigate potential adverse effects:

- a. None

Recommended by Park Section 106 Coordinator:

Name: **Jeannette Simons**

Title: **Historic Preservation Officer**

Signature: //Jeannette Simons Date: 4/14/06

E. SUPERINTENDENT'S APPROVAL

The proposed work conforms to NPS Management Policies and NPS-28 and I approve the recommendations, stipulations, and conditions noted in Section B of this form.

Signature of Superintendent: //R. Kevin Cann, Acting//

Date: 6/16/06

*The signed original of this document is on file at
the Environmental Planning and Compliance
Office in Yosemite National Park.*

Minimum Requirements Analysis for Installation of a Permanent River Gage on the Tuolumne River above Hetch Hetchy Reservoir

The California District Office of the United States Geological Survey (USGS) funded by the San Francisco Public Utility Commission proposes to install and maintain a river gage on the Tuolumne River approximately 300 feet upstream of the high water line on Hetch Hetchy Reservoir. This project will take place in Yosemite Wilderness and the installation is intended to be long term, for all intents and purposes permanent. The project location is 37.91667° N and 119.65667° W, North American Datum 1927 (see Figures 1 and 2). The gage would be installed in August or September of 2006 during low water on the river.

The purpose of this installation is to monitor river discharge, temperature, conductivity, and turbidity on the unregulated portion of the Tuolumne River. This basic information is critical to understanding long-term trends in discharge volume and timing, water quality, and snowmelt and runoff processes in this largely undeveloped watershed. A warming trend over the past half century has led to earlier spring runoff across the Sierra Nevada and the trend is likely to continue if not accelerate over the next 50 years. These changes have significant implications for Sierran ecology, hydrology, and California's water supply. The proposed gage would increase our knowledge of Sierran watersheds in general, collect invaluable baseline data for the Tuolumne Basin above Hetch Hetchy reservoir, and serve the needs of Hetch Hetchy managers.

Step 1

Determine whether the proposed action takes place in designated Wilderness.

The proposed action would take place in Wilderness.

Step 2

Determine whether the proposed action is required for the administration of the Yosemite Wilderness.

The standard that must be met for the proposed action is contained in the National Park Service Reference Manual for the administration of Wilderness (RM 41) which states the following:

Research and monitoring devices (e.g., video cameras, data loggers, meteorological stations) may be installed and operated in wilderness if: (1) the desired information is **essential for the administration and preservation of wilderness** and cannot be obtained from a location outside of wilderness without significant loss of precision and applicability, and (2) the proposed device is the minimum requirement necessary to accomplish the research objective safely.

Additionally, the Yosemite Wilderness Plan states:

Wilderness resources will also be monitored to provide an information base for determining trends and to insure that impacts are managed appropriately.

The proposed action will permit long-term monitoring of natural (unregulated) flows on the Tuolumne River which currently contains no permanent river gages above Hetch Hetchy reservoir. This baseline data is essential to understanding trends in flow amounts and timing, snowpack dynamics, and water quality fluctuations in this watershed which is almost entirely designated Wilderness. Collection and analysis of this data constitutes an essential component of the administration of Wilderness by increasing our understanding of watershed dynamics and its responses to climate change. Further, the knowledge gained through this long term monitoring contributes to managers' ability to monitor Wilderness condition and

anthropogenic change. Therefore, the proposed action meets the standard from RM 41 and meets the monitoring objective in the Yosemite Wilderness Plan as stated above.

Step 3

Determine if the objectives of the proposed action can be met with actions outside of wilderness.

The purpose of this study is to obtain an accurate long-term record of flow timing and duration on the unregulated portion of the Tuolumne River. As such, this monitoring needs to take place upstream of Hetch Hetchy Reservoir. (The high water mark on the reservoir is the Wilderness boundary.) Non-Wilderness portions of the watershed above Hetch Hetchy include Glen Aulin High Sierra Camp and Tuolumne Meadows. While permanent gages may eventually be established in these areas, they represent only a fraction of the watershed of interest. Therefore, in order to meet the objectives of this project, a river gage must be placed in designated Wilderness.

Step 4

Develop a list of alternatives to meet the objective of the proposed action. Include ways to reduce or mitigate the impacts of each alternative.

Alternative A, No Action.

The river gage would not be installed. Gross-estimates of river flow and timing could be obtained through reservoir levels.

Alternative B. Install river gage in Wilderness with no satellite telemetry.

The installation would consist of a weather proof instrument box (approximately 2 feet high by 3 feet wide by 2 feet deep) mounted to a 3-4 foot high metal stand that would be bolted to bedrock using four ½ inch diameter holes. The actual location of this gage house would be determined at the time of installation as placement is dependent upon elevation of high-water marks of prior events. A 1.5-2 inch PVC line or a 1 inch galvanized pipe will extend from the gage house approximately 100 feet to the water's edge. The conduit would contain cabling for the depth, temperature, conductivity, and turbidity sensors and will be secured using 4-6 tie-downs bolted to the rock. The line would be concealed as much as possible without trenching by following the contour of the land surface and/or open joints. A series of three staff plates (ruled vertical signs necessary for the measurement of river level) would be tiered from the water's edge up to the gage house. Plates would be mounted in the rock using two ¾ inch holes backfilled with pour-rock. Crest-stage gages, which consists of 4 foot long 2-inch galvanized vertical pipe with a stick running the length of the pipe would be installed on the two upper staff plates to verify peak flows as measured by instrumentation. A total of up to 20 holes would be drilled into bedrock. A solar panel (24 inches by 12 inches) would be mounted on a pole attached to the gage housing and be positioned up to 5 feet above the structure as necessary to obtain a clear view of the southern sky. Data to be collected by this installation would include river stage, temperature, specific conductivity, and turbidity.

Projected crew during construction would be four people over 3-4 days. Access would be by boat provided by Hetch Hetchy personnel. An effort would be made to construct or fabricate as much of the shelter and hardware prior to installation, thereby lessening the need for intensive use of heavy equipment. Motorized equipment required for installation includes a generator and a hammer drill.

After construction, maintenance of the site would require monthly visits by one or two USGS personnel with a boat operator from Hetch Hetchy Reservoir. Visits would entail servicing equipment inside gage house plus wading river to make flow measurements.

Mitigations:

- Transportation of equipment and personnel to the sites would be on foot from boat access on Hetch Hetchy Reservoir.
- Overnight camping during installation would adhere to Wilderness regulations.
- All conduit would be gray or black in color. Conduit would be installed on the ground surface using vegetation, topography, and joints in the bedrock to conceal its location.
- The sealed box for the battery and logging equipment would be painted a dark matte-gray or other suitable camouflage color.

Alternative C. Install river gage in Wilderness with satellite telemetry.

The gage house, staff plates, crest-stage gage, and conduit would be installed as described in Alternative B. Installation would involve the use of motorized equipment (a generator and rock drill). A solar panel (approximately 36 inches by 24 inches) would be installed as described in Alternative B to power monitoring and satellite telemetry equipment. A satellite antenna (approximately 48 inches in length by 10 inches in diameter) would be installed to transmit data on a near real time basis.

Mitigations:

- Transportation of equipment and personnel to the site would be on foot from boat access on Hetch Hetchy Reservoir.
- Overnight camping during installation would adhere to Wilderness regulations.
- All conduit would be gray or black in color. Conduit would be installed on the ground surface using vegetation, topography, and joints in the bedrock to conceal its location.
- The sealed box for the battery and logging equipment would be painted a dark matte-gray or other suitable camouflage color.
- The solar panel and satellite antenna would be mounted to the gage house structure.

Step 5

Determine the effects of each alternative on wilderness, health, and character. Include cumulative effects.

Alternative	Biophysical Effects	Experiential Effects	Wilderness Character
<p>A. No Action The gage would not be installed.</p>	<ul style="list-style-type: none"> ○ None 	<ul style="list-style-type: none"> ○ None 	<ul style="list-style-type: none"> ○ None
Alternative	Biophysical Effects	Experiential Effects	Wilderness Character
<p>B. Installation in Wilderness with no satellite telemetry. No real-time data access.</p>	<ul style="list-style-type: none"> ○ Trampling and trailing by an installation crew of 4 people over 4 days. ○ Drilled holes in bedrock. There would be up to ten ½” diameter holes and ten ¾” holes. The number and size of holes necessitate the use of motorized equipment. 	<ul style="list-style-type: none"> ○ This action would be a significant impact to Wilderness experience due the visibility of the installation. However, it is unlikely that a visitor would ever see the installation due the inaccessibility of the site No trails are nearby, and the terrain is extremely steep. No public boating is permitted on Hetch Hetchy reservoir so the site cannot be accessed by boat. ○ Short term use of motorized equipment during installation. 	<ul style="list-style-type: none"> ○ Negative impact due to a permanent installation. Pending the removal of a decommissioned gage at Falls Creek, this action results in a net increase of structures in Yosemite Wilderness.
Alternative	Biophysical Effects	Experiential Effects	Wilderness Character
<p>C. Installation in Wilderness with satellite telemetry. River flows would be transmitted via GOES satellite to USGS servers in near real-time.</p>	<ul style="list-style-type: none"> ○ Trampling and trailing by an installation crew of 4 people over 4 days. ○ Drilled holes in bedrock. There would be up to ten ½” diameter holes and ten ¾” holes. The number and size of holes necessitate the use of motorized equipment. 	<ul style="list-style-type: none"> ○ This action would be a significant impact to Wilderness experience due the visibility of the installation. However, it is unlikely that a visitor would ever see the installation due the inaccessibility of the site No trails are nearby, and the terrain is extremely steep. No public boating is permitted on Hetch Hetchy reservoir so the site cannot be accessed by boat.. ○ Short term use of motorized equipment during installation. 	<ul style="list-style-type: none"> ○ Negative impact due to a permanent installation. Pending the removal of a decommissioned gage at Falls Creek, this action results in a net increase of structures in Yosemite Wilderness.

Step 6

Determine the management concerns of each alternative.

Alternative	Health and Safety Concerns	Societal/Economic/Political Concerns
<p>A. No Action The gage would not be installed.</p>	<ul style="list-style-type: none"> ○ None 	<ul style="list-style-type: none"> ○ Negative political impact resulting from limiting the ability to collect essential baseline data from the largest watershed in Yosemite National Park. House Report 98-40 accompanying the Yosemite Wilderness Act outlines the importance of hydrometeorological monitoring despite its impacts to Wilderness Character. ○ Negative political and economic impact from less efficient management of Hetchy Hetchy Reservoir. Detailed knowledge of inflow, diurnal fluctuations, and water temperature and conductivity helps managers understand the progress of spring runoff and predict future flows. Turbidity measurements help managers decide when and at what level to draw water from the reservoir to insure delivery of good quality water to their customers.
<p>B. Installation in Wilderness with no satellite telemetry. No real-time data access.</p>	<ul style="list-style-type: none"> ○ Work in Wilderness requires careful coordination, daily safety briefings, and well-established emergency procedures. 	<ul style="list-style-type: none"> ○ Negative political impact resulting from visible installations in Wilderness ○ Project cost: Approximately \$30,000.
<p>C. Installation in Wilderness with satellite telemetry. River flows would be transmitted via GOES satellite to USGS servers in near real-time.</p>	<ul style="list-style-type: none"> ○ Work in Wilderness requires careful coordination, daily safety briefings, and well-established emergency procedures. 	<ul style="list-style-type: none"> ○ Negative political impact resulting from visible installations in Wilderness ○ Project cost: Approximately \$30,000.

Step 7 Choose an alternative

Alternative C, installation of a permanent river gage with satellite telemetry, is the preferred alternative. This action meets the minimum requirements for administration of Wilderness for the following reasons:

- The baseline hydrometeorological data to be collected at this installation is critical to the management of Wilderness.
- The data collected at this site will serve the greater scientific community and downstream users of the Tuolumne River
- Impacts to Wilderness Character, while significant, are localized and not generally visible to the public

The installation will be visually obtrusive. Staff plates are white with black rule marks and numbering in order to read river level from a distance. Three of these plates will be installed to span the expected range of river flow levels. The gage house needs to be mounted high enough to avoid inundation by peak flows. In this location, a reasonably level spot for installation could be inundated by an extreme flood. As such, the structure could be up to 6 feet in height. Additionally, a solar panel and satellite antenna would be mounted to the top or side of the structure. These additions are necessary for the following reasons:

- Near real-time data access assures that problems with monitoring equipment (power failures, equipment damage due to flooding, storms, and wildlife, and component failure) can be identified and remedied quickly. This is critical in the maintenance of a complete long-term and reliable record of flows.
- Real-time data access will also allow reservoir managers to observe timing and trends in flow, particularly during spring runoff, resulting in improved management of reservoir levels. Turbidity measurements help will help managers decide when and at what level to draw water from the reservoir to insure delivery of good quality water to their customers.

In order to secure components of the installation to bedrock, up to 20 holes will be drilled. These will be drilled using a hammer drill powered by a gas generator. The size and number of holes necessary make drilling using non-motorized tools infeasible.

Alternatives A and B are undesirable because real-time data would not be available. Establishing a long-term monitoring site of any sort requires active management such as regular maintenance visits and timely responses to equipment failures to assure data completeness. Untelemetered monitoring sites associated with other research projects in the park show a modest but significant failure rate resulting lost data for periods of 1-8 months. The proposed installation and subsequent site maintenance represents a significant commitment of public funds to secure high quality data. Moreover, the addition of a larger solar panel and satellite antenna amount to a small addition to an already visible installation. Therefore, the benefits of establishing a real time data link through the addition of a larger solar panel and satellite antenna outweigh the increased visibility impacts of the installation.

This gage will result in a net increase in permanent infrastructure in Yosemite Wilderness. Effort has been made to minimize the obtrusiveness of the installation and no other similar gages are proposed for the other less significant drainages entering Hetch Hetchy Reservoir. Given the relatively low profile nature of the gage (compared to gages on similar rivers) and importance of the data to be collected, the benefits of this addition outweigh the increased developed footprint in Yosemite Wilderness.

In order to conduct the proposed work in Wilderness, the USGS and City of San Francisco will meet the following conditions:

1. Transportation of equipment and personnel to the sites would be on foot from boat access on Hetch Hetchy Reservoir.
2. Overnight camping during installation would adhere to Wilderness regulations.
3. All conduit would be gray or black in color. Conduit would be installed on the ground surface using vegetation, topography, and joints in the bedrock to conceal its location.
4. The sealed box for the battery and logging equipment would be painted a dark matte-gray or other suitable camouflage color.
5. The solar panel and satellite antenna would be mounted to the gage house structure.
6. When this gage is no longer being used, the USGS or City of San Francisco will be responsible for removal of equipment and restoration of the site.

Check one:

- The proposed action is a temporary, one-time activity.
- The proposed action will be an on-going, long-term activity.

Reviewed By:

//Laurel Boyers// 4/5/06
Wilderness Manager Date

(Attach any comments and conditions)

Because this is a fairly large installation, it is hoped that data will be maximized for a number of purposes, & the instrumentation will be removed or minimized if technology improves & the information can be collected with a smaller unit.

Approved By:

//James C. Tucker, Acting// 4/10/06
Chief Ranger Date

(Attach any comments and conditions)

//MJ Tollefson// No Date
Superintendent Date

(Attach any comments and conditions)

A copy of the signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park; the signed original is in the Wilderness Office.

Figure 1. Location Map (red dot)

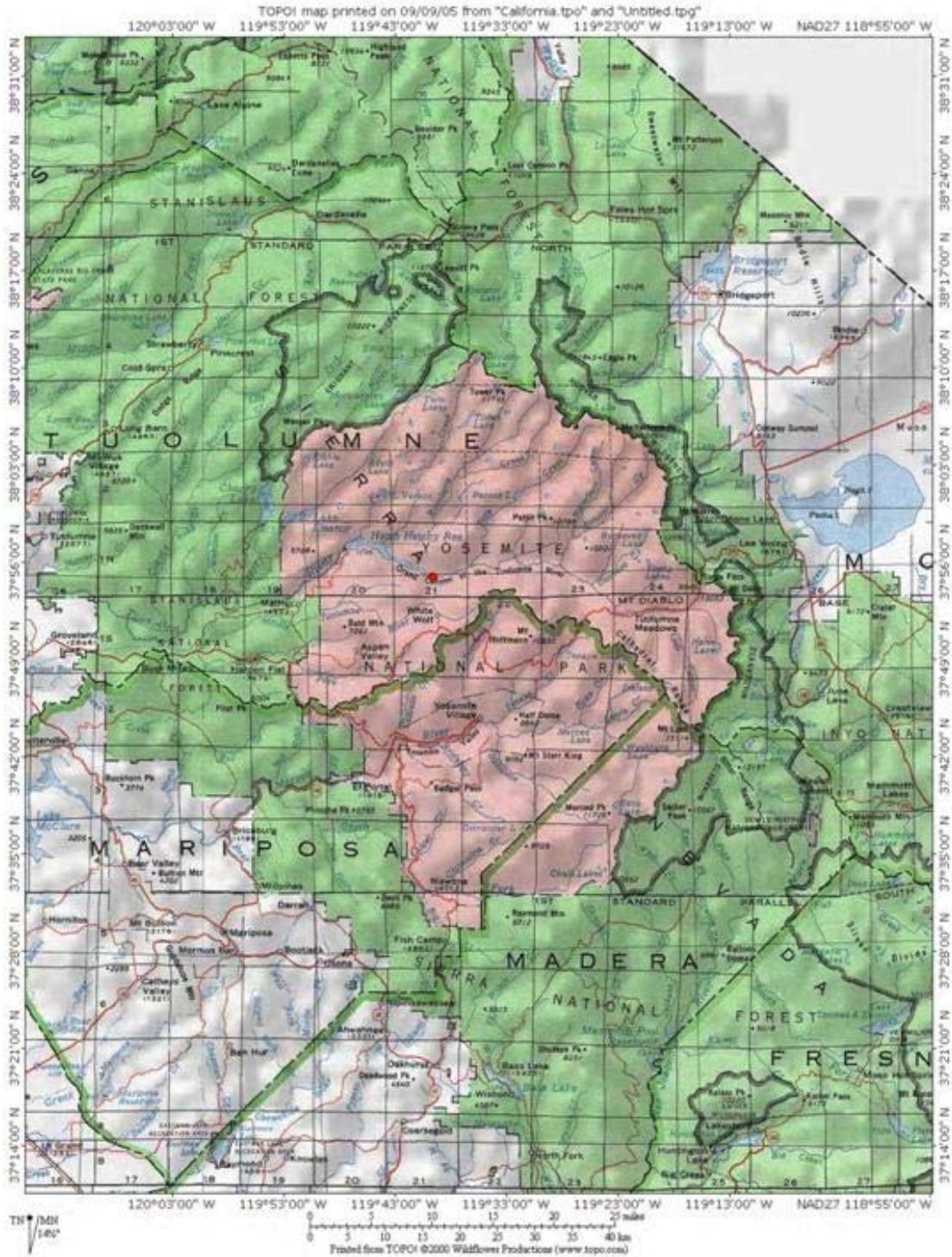
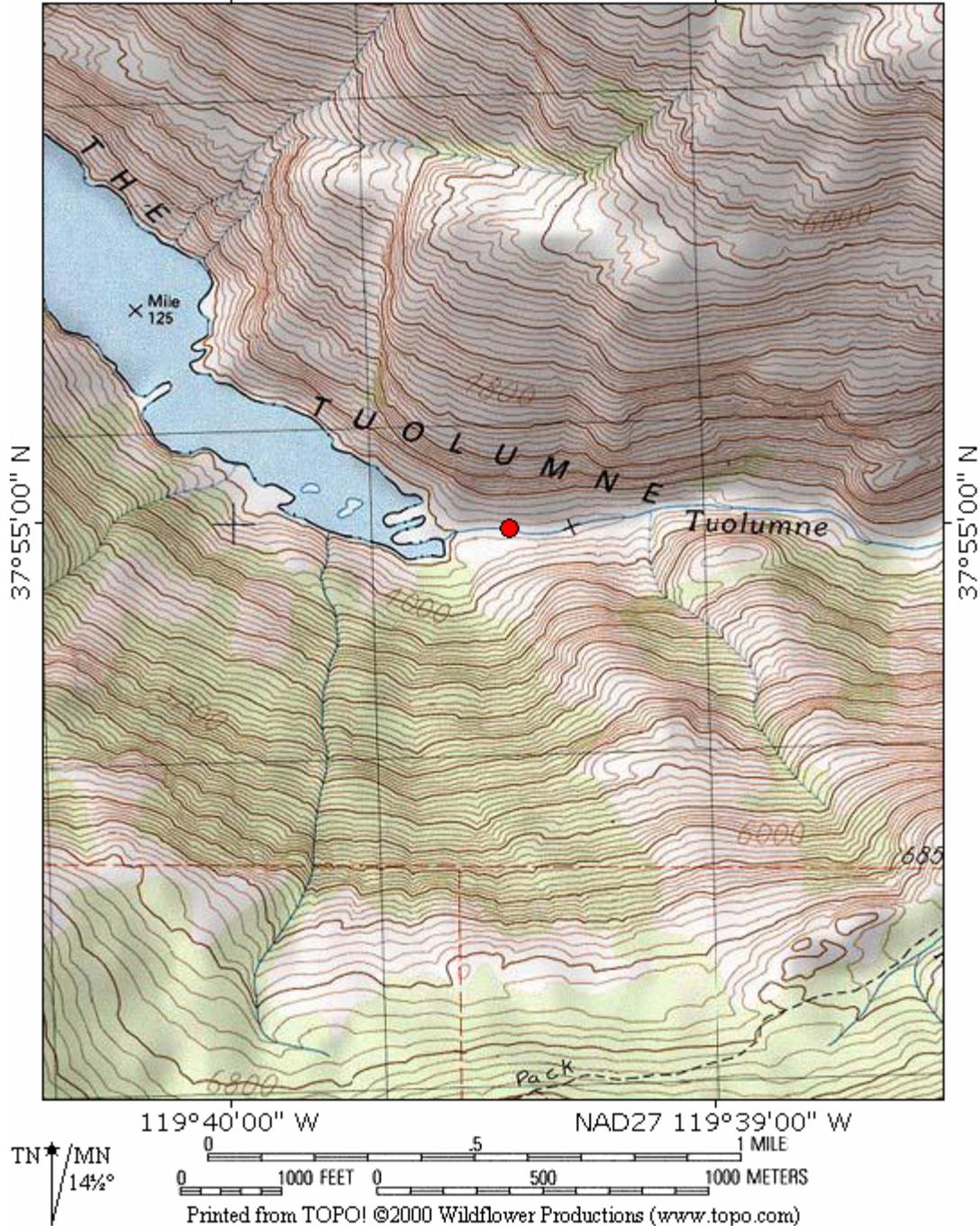


Figure 2. Site Map

TOPO! map printed on 09/08/05 from "California.tpo" and "Untitled.tpg"
119°40'00" W



Wild and Scenic Rivers Act – Section 7 Determination

(Version: FEB06)

Compliance Tracking Number: 2006-042

PEPC Project Number: 15091

TUOLUMNE WILD AND SCENIC RIVER

Installation Of Permanent River Gage Above Hetch Hetchy Reservoir, Tuolumne River, Yosemite National Park

The Tuolumne River in Yosemite National Park is a component of the National Wild and Scenic Rivers System. Projects that involve construction in the bed or on the banks of the Tuolumne River are water resources projects that require review under Section 7 of the Wild and Scenic Rivers Act. The installation of a permanent river gage above Hetch Hetchy Reservoir is within the bed and banks of the Tuolumne River Canyon segment of the Tuolumne Wild and Scenic River; therefore, the installation of the river gage must not intrude upon or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date the Tuolumne River was designated as a component of the Wild and Scenic Rivers System.

A. PROJECT INFORMATION

Title: Tuolumne River, Installation Of Permanent River Gage Above Hetch Hetchy Reservoir

Location: Tuolumne River Canyon, Tuolumne County, California

Project Manager: Jim Roche, Resources Management Science, Yosemite National Park

Project Manager: Clint Nagel, U.S. Geological Survey

Project Description: The California District Office of the United States Geological Survey (USGS) funded by the San Francisco Public Utility Commission proposes to install and maintain a river gage on the Tuolumne River approximately 300 feet upstream of the high water line on Hetch Hetchy Reservoir. A portion of this project will take place within the bed and banks of the river and the installation is intended to be long term, for all intents and purposes permanent. The project location is 37.91667 degrees N and 119.65667 degrees W, North American Datum 1927. The gage would be installed in August or September of 2006 during low water on the river.

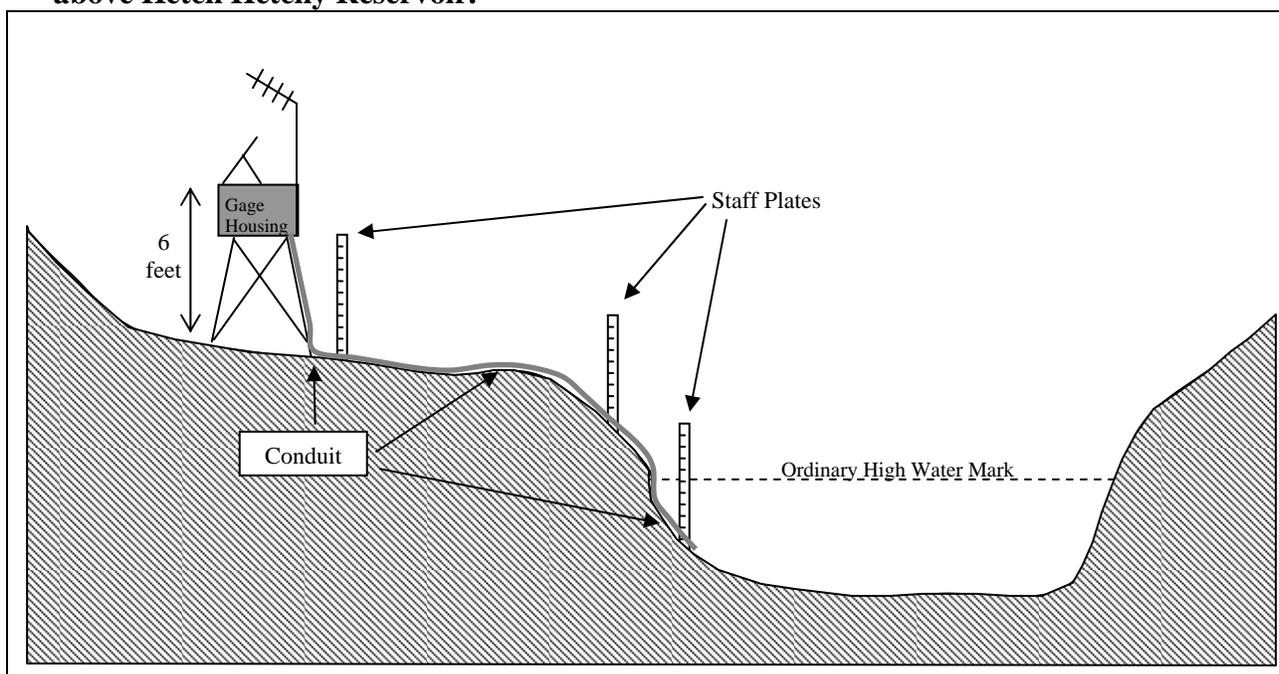
The installation would consist of a weather proof instrument box (approximately 2 feet high by 3 feet wide by 2 feet deep) mounted to a 3-4 foot high metal stand that would be bolted to bedrock using four ½ inch diameter holes (Figure 1). The actual location of this gage house would be determined at the time of installation but would be above the high-water marks of prior events. A 1.5-2 inch PVC line or a 1-inch galvanized pipe will extend from the gage house approximately 100 feet to the river. The conduit would contain cabling for the depth, temperature, conductivity, and turbidity sensors and will be secured using 4-6 tie-downs bolted to the rock. The line would be concealed as much as possible without trenching by following the contour of the land surface and/or open joints. The line would terminate in the river channel and would be bolted to the bottom of the river bed. A series of three staff plates (ruled vertical signs necessary for the measurement of river stage) would be tiered from the water's edge up to the gage house. Plates would be mounted in the rock using two ¾ inch holes backfilled with pour-rock. The lowest staff plate would be close to the river's edge and in the channel. Crest-stage gages, which consists of 4 foot long 2-inch galvanized vertical pipe with a stick running the length of the pipe would be installed on the two upper staff plates to verify peak flows as measured by instrumentation. A total of up to 20 holes would be drilled into bedrock. A solar panel (36 inches by 24 inches) would be mounted on a pole attached to the gage housing and be positioned up to 5 feet above the structure as necessary to obtain a clear view of the southern sky. A satellite

antenna (approximately 48 inches in length by 10 inches in diameter) would be installed to transmit data on a near real time basis. Data to be collected by this installation would include river stage, temperature, specific conductivity, and turbidity.

Projected crew during construction would be four people over 3-4 days. Access would be by boat provided by Hetch Hetchy personnel. An effort would be made to construct or fabricate as much of the shelter and hardware prior to installation, thereby lessening the need for intensive use of heavy equipment. Motorized equipment required for installation includes a generator and a hammer drill.

After construction, maintenance of the site would require monthly visits by one or two USGS personnel with a boat operator from Hetch Hetchy Reservoir. Visits would entail servicing equipment inside gage house plus wading river to make flow measurements.

Figure 1. Tuolumne River Cross-Section at Location of Proposed USGS River Gage above Hetch Hetchy Reservoir.



B. ANALYSIS OF POTENTIAL IMPACTS

Impacts and Mitigations:

This section identifies each potential impact, emphasizing those affecting river “Outstandingly Remarkable Values”, and discusses its relationship to and potential impact on the river and how each impact will be avoided or mitigated. Be thorough, providing appropriate notations about the extent (e.g., quantities of materials affected or released, number of individuals affected, square meters affected), duration (e.g., temporary—give length of time, or permanent), and intensity (none, negligible, minor, moderate, major) of the potential impact.

The primary impacts resulting from this installation would be to scenic values of the Tuolumne River. The installation will be visually obtrusive. Staff plates are white with black rule marks and numbering in order to read river level from a distance. Three of these plates will be installed to span the expected range of river flow levels. The gage house needs to be mounted high enough to avoid inundation by peak flows. In this location, a reasonably level spot for installation could be inundated by an extreme flood. As such, the structure could be up to 6 feet in height. Additionally, a solar panel and satellite antenna would be mounted to the top or side of the structure. The total impacted area would be approximately 10 square meters. This river gage construction constitutes the minimum installation necessary to obtain high quality flow and turbidity data for the unregulated portion of the Tuolumne River above Hetch Hetchy Reservoir.

The following mitigations would be applied to this project:

1. Transportation of equipment and personnel to the sites would be on foot from boat access on Hetch Hetchy Reservoir.
2. Overnight camping during installation would adhere to Wilderness regulations.
3. All conduit would be gray or black in color. Conduit would be installed on the ground surface using vegetation, topography, and joints in the bedrock to conceal its location.
4. The sealed box for the battery and logging equipment would be painted a dark matte-gray or other suitable camouflage color.
5. The solar panel and satellite antenna would be mounted to the gage house structure.
6. When this gage is no longer being used, the USGS or City of San Francisco will be responsible for removal of equipment and restoration of the site.

Summary of Impacts

Table 1. Project Impacts on the River's Free Flow and Water Quality

Section 7 Considerations	Short Term Impacts	Long Term Impacts
Free flow characteristics <ul style="list-style-type: none"> • Channel width/depth • Vertical drop • Channel form 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Water Quality <ul style="list-style-type: none"> • Turbidity • Temperature • Nutrient availability 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None

Table 2. Project Impacts on the Outstandingly Remarkable Values for which the River was Designated Wild and Scenic

River ORVs	Project Impacts
<i>Scenic</i>	<ul style="list-style-type: none"> • This project adds a small permanent structure in an otherwise fairly undeveloped river segment. The structure will not be visible from the trail upstream of the project site or from Hetch Hetchy Reservoir. This constitutes a negligible impact to scenic qualities of this river segment.
<i>Geologic Processes/Conditions</i>	<ul style="list-style-type: none"> • None
<i>Recreation</i>	<ul style="list-style-type: none"> • None
<i>Biological</i>	<ul style="list-style-type: none"> • None
<i>Cultural</i>	<ul style="list-style-type: none"> • None
<i>Hydrologic Processes</i>	<ul style="list-style-type: none"> • None

C. SECTION 7 DETERMINATION

Although within the bed and banks and designated corridor of the Tuolumne Wild and Scenic River the proposed project will not intrude on or unreasonably diminish the scenic, geologic process, recreational, biological, cultural, or hydrologic process values present in the area on the date the Merced River was designated a component of the Wild and Scenic Rivers System.

//Gary W. Colliver// 6/5/06
 Recommended by Gary W. Colliver, Compliance Specialist date

//R. Kevin Cann, Acting// 6/23/06
 Approved by Michael J. Tollefson, Superintendent date

The signed original of this document is on file at the Environmental Planning and Compliance Office in Yosemite National Park.