



Aquatic, Water Quality, Geomorphology,  
& Hydrology Resources

## Technical Working Group Meeting

**Date:**

**Time:**

**Location:**

**Directions**

**Parking:**

**Discussion Topic:**

**Agenda**

**Attendees**

**Summary**

**Handouts, Attachments & Presentations**

## **Directions to SMUD's Customer Service Center**

SMUD has two four-story buildings located adjacent to Highway 50 on the north side, between 59th Street exit and 65th Street exit. The Customer Service Center (CSC) is the newer building of the two located at 6301 S Street, and houses the Rubicon Room, Forestview 1,2, & 3, Sequoia 1,2,& 3, Timberline 1,2, & 3, and the HRL Conference Room located on the third floor (Northwest wing). The Headquarters building is located at 6201 S Street, directly west of the CSC. It houses the Headquarters' Customer Center (HCC), the Auditorium and several other conference rooms.

The Field Reporting Facility (aka FRF) is located behind the SMUD Headquarters building: go under the Light Rail overpass, then to the left about 150 yards.

Directions:

**Heading East:** From downtown Sacramento, head east on Highway 50, exit at **59th Street**. This exit will take you up-and-over Highway 50. Go straight at the first intersection, travel about a half mile. On your left (north) is the SMUD Headquarters building, the next building is the Customer Service Center.

**Heading West:** From Placerville, take Highway 50 to Sacramento and exit at **65th Street**. Go straight about one block after the first intersection. The Customer Service Center is the four-story building on your right (north).

You should be able to find parking spaces for visitors located in the area between the two buildings. There is also parking available in a parking lot on Folsom Blvd. behind the SMUD complex.

If you need assistance to find the Rubicon Room, Timberline 1,2,& 3, Sequoia 1,2,& 3, Forestview 1,2, & 3, and the Hydro Relicensing's Conference Room located on the third floor of the Northwest wing, see the guard at the lobby desk. The Headquarters Customer Center (HCC) room is located in the Headquarters building opposite the board of directors Auditorium in the first floor. Drive Safely.

**Note:** *Downloadable maps can be found at [hydrorelicensing.smud.org/meetings/meet\\_loc.htm](http://hydrorelicensing.smud.org/meetings/meet_loc.htm)*

# SMUD HEADQUARTERS AND CUSTOMER SERVICE CENTER

## Relicensing Parking Lot Locations



DATE: 10/2/2003

LOCATION: SMUD ~ CSC BUILDING ~ WHITE ROCK ROOM  
~ 9:00 AM - 4:00 PM

# UARP Hydro Relicensing

## Aquatic/Water Quality/Hydrology/Geomorphology Technical Working Group

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**Sacramento Municipal Utility District (SMUD)  
Upper American River Project (UARP) Hydro Relicensing Project**

**Aquatic Resources, Water Quality, Geomorphology and Hydrology  
Technical Work Group Meeting**

**Sacramento Municipal Utility District (SMUD)  
Customer Service Center (CSC) White Rock room  
6301 "S" Street Sacramento, California**

**October 2, 2003  
9:00 a.m. - 4:00 p.m.**

**Agenda**

<b>Time</b>	<b>Topic</b>
9:00 a.m.	Introductions
9:05	Review meeting agenda
9:10	Key and timely issues
9:40	Approve meeting summaries from September 4, September 8 and September 19, 2003
10:00	Discussion of Amphibian Test Flow Studies in Slab Creek Dam Reach
10:45	Habitat Suitability Criteria workshop discussion
11:30	Lunch (on your own or see Karen for lunch order)
12:30 p.m.	Continue Habitat Suitability Criteria discussion and approve suitability curves
3:45	Next meeting agenda items
4:00	Adjourn



on October 1, 2003 was not approved pending further discussions with some participants. The SFAR Instream Flow and Fluctuation Study plan was approved in concept but could not be technically approved by PG&E, pending a forthcoming memorandum of understanding (MOU) between PG&E and SMUD.

Future meeting dates were calendared as noted in the future meetings section below.

**Action Item:** Dudley Reiser will send to Lon Maier information from the Flathead River Project about the effect of fluctuating flows on macroinvertebrates for distribution to the TWG.

**Approve meeting summaries.** The meeting summaries from September 4, September 8, and September 19, 2003 were approved, with minor edits to the September 19<sup>th</sup> summary.

**Amphibian test flows below Slab Creek Dam discussion.** Amphibian surveys have been underway for the last few weeks. It was stipulated in the study plan that foothill yellow-legged frog (FYLF) test flow surveys would be conducted in areas where FYLF breeding had been documented. Breeding habitat has been documented within the Camino Reach. One FYLF sighting has been made within the Slab Creek Dam Reach, which was late in the season; no breeding habitat has been identified in this reach. Consequently, it was proposed that test flows be conducted in the Camino Reach but not the Slab Creek Dam reach. Participants asked that if breeding habitat is found later within this reach, could the study be continued. It was agreed by participants that this approach would be satisfactory, with the exception of CDFG, which reserved the right to consult with others at CDFG who may have comment. It was noted that if no response is received by Tuesday, then the assumption can be made that CDFG concurs with this approach. For information, test flows are scheduled for October 28, 29 and 30<sup>th</sup> within the Camino Reach, with flows of approximately 10, 30, and 100 cfs.

**Benthic Macroinvertebrate (BMI) study discussion for the reach below Chili Bar Dam.** This study plan has been approved, however TWG discussion was needed regarding the methodology for the study area within the fluctuating flow channel. At each site, four locations will be sampled in the fluctuation zone (one within the wetted channel, three within the zone of fluctuation between 200cfs and 2000cfs), with each sample encompassing a one square-foot area, with an estimated 200-800 organisms per sample laboratory identified to taxa. If possible, categories of exposure will be assigned to each location (the three samples in the exposed channel may not vary significantly in exposure since fluctuations are relatively rapid). The goal of the study is to characterize macroinvertebrate use or colonization, including the upper strata of the hyporheic zone (e.g., within approximately six inches of the surface), to determine the extent to which the zones of flow fluctuation support BMI productivity, and ultimately the aquatic food web. Other discussion items included:

- Will the study provide the information needed to make management decisions?
- Initial review of data is needed before subsequent decisions can be made.

- Drift sampling may or may not assist in determining BMI population assemblages; drift sampling results were inconclusive in PG&E studies at Pit 1 and the Rock Creek Cresta projects.
- Focus should be given to resource components/activities that have the greatest probability of a controllable effect; for example, if fish are management directive, then attention should be given to fish population and health.
- Contribution of hyporheic zone to BMI assemblage.
- An expansive survey of the river is not the objective of the study. At this stage, the study could best be characterized as a pilot study.
- The Fisher and LaVoy study is the basis for study methodology, however it is being adapted to the microhabitat being studied (cobbles vs. sand bars).
- Time is of the essence; to complete the work this year, approval is needed now.

**Agreement:** The study was approved by the TWG (with the exception of CDFG, which reserved the right to consult with others at CDFG who may have comment). The study will be modified to note that it is a “pilot study” and that additional work may be needed if so determined by the TWG. The diagram provided at the meeting would be attached to the BMI Study Plan (should this be the Flow and Fluctuation Study Plan?) as an addendum with clarifying language.

**Habitat Suitability Criteria (HSC) curve discussion:** This will be the fourth discussion relative to HSC curves for the species being discussed. Curves were examined for brown trout, rainbow trout, and hardhead. Rainbow trout (RBT) suitability curves were presented for

- spawning depths
- spawning velocities
- spawning substrates
- juvenile velocities
- juvenile depths
- adult depths
- adult velocities.

Brown trout (BT) suitability curves were presented for

- spawning depths
- spawning velocities
- 
- juvenile velocities
- juvenile depths
- adult depths
- adult velocities.

Limited data are available regarding hardhead (HH). HH suitability curves were presented for

- adult depths
- adult velocities.

Discussion included:

- RBT is probably the species with the greatest focus, given its distribution, management interest, and flow preferences. The importance of BT and HH in management recommendations is yet to be determined
- Most of the published or report derived Habitat Suitability Criteria (HSC) curve peaks were flattened to provide a broader fit of the curve over the top of the underlying frequency histogram.
- Many HSC curve “tails” were flattened to provide a less abrupt descent to zero suitability.
- Adult depth curves were generally “flat lined” to make all depths above some minimum have an equal suitability index of 1.0
- RBT fry curves need to be included in the consideration of all life stages for RBT.

The table below documents the status of discussion on each of the HSC curves. Stillwater Sciences will distribute the Excel charts with the workshop notes and rough markups (line drawings) from the workshop. A subsequent distribution will depict just the final curves, with the lines digitized.

<b>Species</b>	<b>Life stage</b>	<b>Channel size</b>	<b>Criteria</b>	<b>Status as of 10-2-03 TWG meeting</b>
Rainbow Trout	Adult	Small	Depth/Velocity	Concurrence.
Rainbow Trout	Adult	Medium	Depth/Velocity	Concurrence.
Rainbow Trout	Adult	Large	Depth/Velocity	Concurrence.
Rainbow Trout	Juv	All	Depth/Velocity	Concurrence.
Rainbow Trout	Spawning	Small	Depth/Velocity	Concurrence.
Rainbow Trout	Spawning	Med/Large	Depth/Velocity	Concurrence.
Rainbow Trout	Spawning	All	Substrate	Concurrence.
Brown Trout	Adult	Small	Depth/Velocity	Concurrence.
Brown Trout	Adult	Medium	Depth/Velocity	Look at use of RBT curve as a first cut. Scott may suggest simply averaging small and large channel curves.
Brown Trout	Adult	Large	Depth/Velocity	Concurrence on following MF Stan curve
Brown Trout	Juv	All	Depth/Velocity	Concurrence.
Brown Trout	Spawning	Small	Depth	Concurrence on using rainbow trout curve
Brown Trout	Spawning	Med/Large	Depth	Concurrence on using rainbow trout curve
Brown Trout	Spawning	All	Velocity	Tentative concurrence, but look at some other curves as well.
Brown Trout	Spawning	All	Substrate	Did not discuss separately. Assume concurrence on same curve as used for rainbow spawning.
Hardhead	Adult	Any	Depth	Concurrence. Revisit after talking with Peter Moyle re: velocity curve
Hardhead	Adult	Any	Velocity	Discuss with Peter Moyle

**Future meetings and agenda:**

Date	Subject(s)	Location
November 6, 2003	Iowa Hill discussion	Forestview 1 & 2
November 13, 2003	Iowa Hill discussion	
December 4, 2003	Open agenda	Sequoia 2 & 3
December 5, 2003		

Meeting dates and locations may also be found on SMUD's web page at <http://www.smud.org/relicensing/index.html>

**Ongoing commitments:**

- Field schedules will be provided to the TWG on a monthly basis. The schedules are tentative. Contact Lon Maier if attendance is desired for any of the fieldwork underway.
- SMUD will advise participants of any particular focus that an upcoming meeting may have, and develop an agenda for the meeting.
- SMUD commits to sending out draft study plans at least five working days before meeting to discuss the plans.

**Attachments available with this summary:**

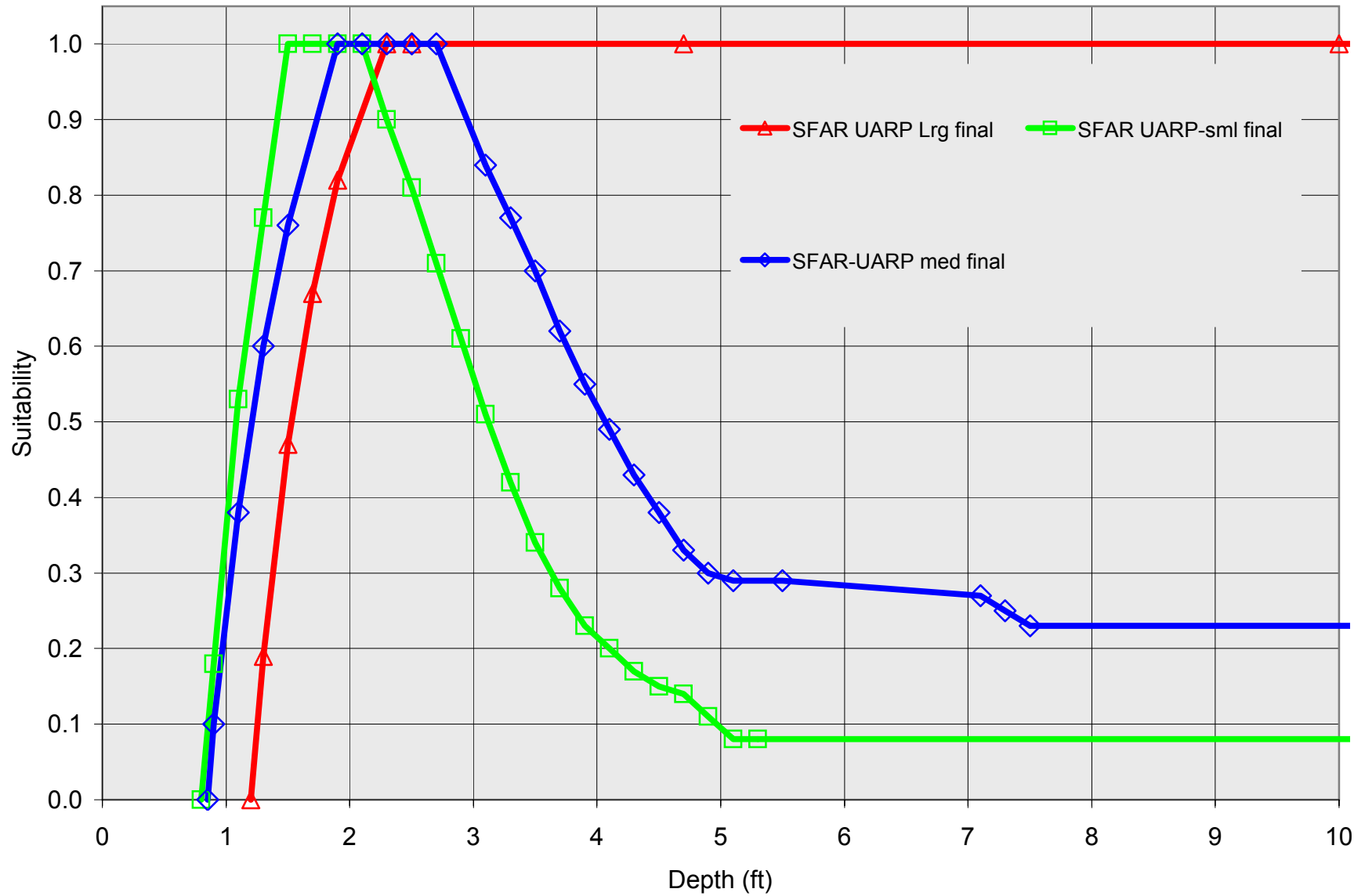
- Meeting summaries from September 4, 8, and 19
- Chili Bar Downstream Reach Fluctuation Zone Pilot Study diagram

Attachments are available on the SMUD UARP "Bulletin Board" located at <http://eurekasw.sharepoint.bcentral.com/uarp/>

If you would like copies of any past document, please e-mail [hmaier@smud.org](mailto:hmaier@smud.org) with your request or visit the SMUD relicensing web page at <http://www.smud.org/relicensing/index.html>.

These summaries are not intended to be a transcript of the meeting, but only to serve as a brief synopsis. Please provide any comments you may have regarding these summaries to [hmaier@smud.org](mailto:hmaier@smud.org)

### Rainbow Trout Adult



### Brown Trout Adult

