



## Aquatic, Water Quality, Geomorphology, & Hydrology Resources Water Balance Model Subcommittee

### 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



### SACRAMENTO

From Downtown Sacramento area:

Take Highway 50 East to 65<sup>th</sup> Street exit, Turn left onto 65<sup>th</sup> Street, At traffic signal turn left onto S Street, Turn right or left into SMUD parking lots, Enter buildings from either front or side entrances.

**Sacramento Municipal Utility District**  
White Rock Room  
6301 S Street  
Sacramento, CA 95817

**Water Balance Model Subcommittee**  
**Upper American River Project (UARP)**  
**July 28, 2003**  
**9:00 am to 4:00 pm**

**Agenda**

**Administration**

- Introduction
- Approve / Modify Agenda
- Approve July 15, 2003 Water Balance Model subcommittee meeting summary
- Identify any time sensitive items that should be discussed and are not on the agenda

**Status reports**

- July 15<sup>th</sup> meeting action items
- Model confidentiality / use Agreement
- Mean Daily flows from EID powerhouse
- Requesting Model Run
- Alternative Water Year type

**Synthesized Unimpaired Hydrology**

- Questions on Report

**Initial List of Nodes**

- Approve / modify changes to the initial list of nodes
- Chili Bar Reach nodes

**Next meeting Agenda**

DATE: 07-28-2003

LOCATION: SMUD-CSC Building -  
White Rock Room

# UARP Hydro Relicensing

## Water Balance Model Sub-Committee

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**DATE:** August 18, 2003

**TO:** Upper American River Project Relicensing  
Plenary Group and TWGs

**FROM:** Water Balance Model Subcommittee

**SUBJECT:** Summary of July 28, 2003 Meeting of the  
Water Balance Model Subcommittee

**SUMMARY:** The Water Balance Model Subcommittee met on July 28. Major decisions included: 1) approval of model nodes, with the understanding that nodes can be amended as relicensing proceeds; and 2) approval of the hydrology for modeling purposes, with a request for some additional clarifications/additions to the Hydrology Report/CD. The next Subcommittee meeting is scheduled for August 20, and major agenda items include 1) “Base Case” conditions for modeling; 2) Water Year types; and 3) process to request model runs.

As scheduled and announced, the Water Balance Model Subcommittee (Subcommittee) met from 9 a.m. to 1:30 p.m. on Monday, July 28, 2003, at the Sacramento Municipal Utility District’s office in Sacramento. A notice of and agenda for the meeting was distributed to all interested parties on July 15, 2003. Meeting participants included:

- Jim Eicher – USBLM
- Margaret Hannaford - HCE
- Bill Hetland – EDCWA
- Bob Hughes – CDFG
- Jim Lynch - FANP
- Parvez Mody – SMUD
- Cheryl Mulder – ENF
- Beth Paulson – ENF
- Mike Preszler – Mead & Hunt
- Bruce McGurk – PG&E

Jim Lynch distributed a draft of the meeting summary to the Water Balance Model Subcommittee on August 8, 2003, and requested suggested revisions by August 15. He received suggestions from only one individual, Bruce McGurk (Pacific Gas and Electric Company), and Bruce’s comments are accepted in this version without change.

A summary of the meeting is provided below to familiarize the Plenary Group, Technical Working Groups and other interested parties with the Subcommittee’s activities. This memo is not intended to be a transcript of the meeting or meeting notes, but only to capture the general tone of the meeting and summarize major discussion items, decisions and action items, except in those cases where a participant specifically requested that a statement be included in the summary.

#### **ADMINISTRATION**

***July 15, 2003 Subcommittee Summary Approved*** – The Subcommittee approved the July 15 Water Balance Model Subcommittee meeting summary dated July 16 without change.

#### **STATUS OF ACTION ITEMS**

***Subcommittee Reviewed Ongoing Action Items*** - The Subcommittee reviewed the status of action items as listed in the July 15 Subcommittee meeting summary. Action items that were completed include:

- Agencies provide comments on model use/confidentiality agreement to SMUD.
- Parvez Mody to finalize the model run numbering system.
- Beth Paulson to email to Parvez her comments on Jim Lynch's "straw person" proposal on the model run request process. *[On 8/5, Jim emailed to the Subcommittee his second draft based on comments from Beth, with a recommendation the draft be discussed at the 8/20 meeting.]*
- SMUD's Expert User issue revised list of nodes for the model.
- Parvez Mody said that the Licensee agreed to make the EDCWA requested model run and would issue an email to that effect.

Outstanding action items are listed below.

1. SMUD's Expert User to issue an email stating SMUD will make EDCWA's model run request (the first request).
2. Dave Hanson to call John Gangemi and Cheryl Mulder to call Sue Norman to make them aware of the Water Balance Model and how runs can be requested. *[Cheryl Mulder said she had left a voicemail message for Sue Norman. Perhaps John and Sue can participate in the Plenary Group training session, described in Action Item 6 below.]*
3. Jim Lynch, Cheryl Mulder, Robert Hughes, Mike Pressler and SMUD's Expert User to review data and possibly offer alternative water year type definitions. *[Jim, Cheryl, Mike and Bob scheduled a meeting at Jim's office for August 18 to review data.]*
4. Stafford Lehr and Cheryl Mulder to provide SMUD's Expert User mean daily flows in an Excel file for: 1) for the period from 1975 through 2000, mean daily flows from El Dorado Powerhouse; 2) mean daily flows from the SFAR into Silver Creek for the period 1975 through 2000 assuming Project 184 was in operation; and 3) mean daily flows from the El Dorado Powerhouse for the period 1975 through 2000 assuming Project 184 was in operation. These data would be input files into the Water Balance Model. *[Cheryl, Parvez and Margaret will talk about obtaining these data.]*
5. JBIT to advise if consumptive withdrawals should be included in the model. *[Bill Hetland said he would be sure the JBIT addresses this at its 8/14 meeting.]*
6. Water Balance Model Subcommittee recommend to the Plenary Group that SMUD provide a half-day presentation to the Plenary Group on the Water Balance Model and how to request runs. *[Jim Lynch was asked to advise the Plenary Group that the Water Balance Model Subcommittee recommends this. Jim advised the Plenary Group of this at the August 7 Plenary Group meeting. The Plenary Group did not scheduled a date for the presentation and training.]*
7. SMUD to add Chili Bar and Iowa Hill to the model. No date assigned.

## MODEL NODES

***Subcommittee Approved List Of Nodes With Additions, With Caveat That Modifications Could Be Made In The Future*** – The Subcommittee reviewed Parvez's revised list of nodes for the Water Balance Model. The participants modified it slightly at the Chili Bar Powerhouse and Dam, and added two nodes in the Reach Downstream of Chili Bar. The Subcommittee said it could live with these nodes to move forward with modeling under the understanding that nodes could be amended, added or removed as needed. It was noted that Bill Center, who was not at the Subcommittee meeting, might provide some valuable input regarding the nodes in the Reach Downstream of Chili Bar. Jim Eicher agreed to contact Bill and get his input. The additional nodes were:

- Chili Bar Dam Spill
- Chili Bar Powerhouse Flow

- Chili Bar Powerhouse Synchronous Bypass Valve
- Old USGS Gage near Greenwood Creek (So. Fork American River nr Lotus, 11445500)
- So. Fork American River Below Dutch Creek (a synthesized point, not associated with any historical gage)

**Action Item 8:** SMUD's Expert User to amend the revised List of Nodes to include the additions, and SMUD to include the nodes in the Water Balance Model program.

**Action Item 9:** Jim Eicher to contact Bill Center and get his comments, and to advise the Subcommittee.

**Licensee Asked To Calculate Accretion Flows From Weber Creek** – The Subcommittee asked Margaret Hannaford to calculate to the best of her ability mean daily flows over the period of record from Weber Creek (historical data from USGS gage 11446000, Weber Creek nr Salmon Falls, are for the period from 1943 – 1959), including releases from the upstream water treatment plant.

**Action Item 10:** Margaret Hannaford to estimate flows from Weber Creek and include these data in the Hydrology Report and CD.

## BASE CASE

**Subcommittee Agrees To Begin Discussion Of "Base Case"** – The Subcommittee agreed to begin discussion of the "Base Case" for modeling purposes, and specifically agreed it would be discussed at the September 9 and 23 meetings. The Subcommittee agreed that it would develop a recommendation for consideration by the Plenary Group. Jim Lynch said he would draft a "straw person" description for consideration by the Subcommittee, and would distribute this at least 7 days in advance of the next meeting.

**Action Item 11:** Jim Lynch to prepare draft "straw person" and distribute it to subcommittee by August 13. [Jim Lynch distributed the draft on 8/5.]

## REVIEW OF HYDROLOGY

**Subcommittee Agrees That Model Can Go Forward With Hydrology, But Additional Analysis To Be Done** – Margaret Hannaford discussed the existing hydrology database with the Subcommittee. The Subcommittee determined that the hydrology would be adequate for modeling purposes, and the modeling could go forward (contingent on the agencies and SMUD reaching agreement on model availability), but the Subcommittee requested that Margaret. perform some additional work. This included:

- Hydrology Report
  - Add comment on use of constant monthly net evaporation values
  - Add additional information on basin geology
  - Provide 1993 Rubicon Reservoir storage data to Pressler
  - Rubicon Inflow: Clarify 2<sup>nd</sup> paragraph, first sentence
  - Buck Island Inflow: Clarify 2<sup>nd</sup> paragraph, first sentence

- Additional clarification to section on Junction, Camino and Brush on last three paragraphs of section
- Hydrology CD
  - Add historic reservoir storage data for 2000 and 2001
- Data Revisions
  - Perform smoothing at Rubicon and Buck Island to remove questionable low flow values
  - Reevaluate Brush Creek annual flow (based on double mass diagram). Margaret indicated that if revisions were made to Brush Creek, it may result in a modification of flow at Slab, Camino and Junction. The Subcommittee indicated this was not an issue.

**Action Item 12:** Margaret Hannaford to make the revisions above to the Hydrology Report and CD, and reissue both, and perform the additional requested analysis.

### **NEXT MEETING**

***The Next Water Balance Subcommittee Meeting Is Scheduled For August 20*** - The next Water Balance Subcommittee meeting is scheduled for Wednesday, August 20, at SMUD. As agreed to by the Subcommittee, agenda items will include:

- Review/Approve Agenda
- Identify “Hot” Items
- Approve July 28 Subcommittee Meeting Summary
- Review Status of Outstanding Action Items
- Review/Discuss Second Draft of Model Request Process
- Report on and Discussion of Water Year Types
- Review/Discuss “Straw Person” of Base Case Description
- Identify Meeting Action Items
- Set Agenda for September 9 Water Balance Model Subcommittee Meeting

# UARP Relicensing

## Water Balance Model Nodes

### Reservoir Nodes:

- 1 Rubicon Reservoir
- 2 Rockbound Reservoir
- 3 Buck Island Reservoir
- 4 Loon Lake Reservoir
- 5 Gerle Reservoir
- 6 Robbs Peak Reservoir
- 7 Ice House
- 8 Union Valley Reservoir
- 9 Junction Reservoir
- 10 Camino Reservoir
- 11 Brush Creek Reservoir
- 12 Slab Creek Reservoir
- 13 Iowa Hill Reservoir
- 14 Chili Bar Reservoir

## **Stream flow Nodes:**

### **Rubicon Reach:**

- 1 Rubicon Reservoir bypass release in to Rubicon River
- 2 Rubicon Reservoir spill in to Rubicon River
- 3 Rubicon - Rockbound Tunnel inlet
- 4 Rubicon River at Rubicon Springs
- 5 Rubicon River below Miller Creek
- 6 Rubicon River below Little Rubicon River

### **Rockbound Reach**

- 1 Rockbound Lake release to Buck Island Reservoir

### **Buck Island Reach**

- 1 Buck Island Reservoir bypass release in to Little Rubicon River
- 2 Buck Island Reservoir spill in to Little Rubicon River
- 3 Buck Island - Loon Lake Tunnel inlet

### **Loon Lake Reach**

- 1 Loon Lake PH diversion
- 2 Loon Lake bypass release in to Gerle Creek
- 3 Loon Reservoir spill in to Gerle Creek
- 4 Gerle Creek below Jerrett Creek
- 5 Gerle Creek below Barts and Dellar Creek
- 6 Gerle Creek below Rocky Basin Creek
- 7 Gerle Creek at Gerle Creek Reservoir

### **Gerle Reach**

- 1 Gerle Reservoir bypass release in to Gerle Creek
- 2 Gerle Reservoir spill in to Gerle Creek
- 3 Gerle Reservoir to Robbs Peak Reservoir (Gerle Canal)
- 4 Gerle Creek at Confluence with SF Rubicon River
- 5 SF Rubicon at Confluence with Rubicon River

### **Robbs Peak Reach**

- 1 Robbs Peak Reservoir bypass release in to SF Rubicon River
- 2 Robbs Peak Reservoir spill in to SF Rubicon River
- 3 Robbs Peak PH diversion

### **Ice House Reach**

- 1 Ice House Reservoir bypass release in to SF Silver Creek
- 2 Ice House Reservoir spill in to SF Silver Creek
- 3 Jones Fork PH diversion
- 4 SF Silver Creek below Peavine Creek
- 5 SF Silver Creek below Windmiller Ravine
- 6 SF Silver Creek below Big Hill Canyon
- 7 SF Silver Creek at Junction Reservoir

### **Union Valley Reach**

- 1 Union Valley spill in to Junction Reservoir
- 2 Union Valley PH diversion

### **Junction Reach**

- 1 Junction Reservoir bypass release in to Silver Creek
- 2 Junction Reservoir spill in to Silver Creek
- 3 Jaybird PH diversion
- 4 Silver Creek below Grey Horse Creek
- 5 Silver Creek below Onion Creek
- 6 Silver Creek below Sugar Pine Creek
- 7 Silver Creek at Camino Reservoir

### **Camino Reach**

- 1 Camino Reservoir bypass release in to Silver Creek
- 2 Camino Reservoir spill in to Silver Creek
- 2 Camino PH diversion
- 3 Silver Creek below Round Tent Canyon
- 4 Silver Creek Halfway, no name creek
- 5 Mouth of Silver Creek

### **Brush Creek Reach**

- 1 Brush Creek Reservoir bypass release in to Brush Creek
- 2 Brush Creek Reservoir spill in to Brush Creek
- 3 Camino PH diversion
- 4 Brush Creek Inflow to Slab Creek Reservoir

### **Slab Creek Reach**

- 1 Slab Creek Reservoir bypass release in to SF American River
- 2 Slab Creek Reservoir spill in to SF American River
- 3 White Rock PH diversion
- 4 SF American River below Iowa Canyon Creek
- 5 SF American River above Mosquito Road Bridge
- 6 SF American River below Rock Creek
- 7 SF American River Above Chili Bar Reservoir
- 8 Diversion to Iowa Hill Reservoir

### **Iowa Hill**

- 1 Release to Slab Creek

### **Chili Bar Reach**

- 1 Chili Bar Reservoir bypass release in to SF American River  
(PH diversion)
- 2 Chili Bar spill in to SF American River

## **Inflow Nodes**

- 1 Rubicon River Inflow to Rubicon Reservoir
- 2 Highland Creek Inflow to Rockbound Reservoir
- 3 Ellis Creek Inflow to Loon Lake
- 4 Gerle Creek Inflow Above Rocky Basin Creek
- 5 Gerle Creek Inflow to Gerle Reservoir (including Rocky Basin Creek)
- 6 SF Rubicon Inflow to Robbs Peak Reservoir
- 7 SF Silver Creek Inflow to Ice House Reservoir
- 8 Tells Creek Inflow to Union Valley Reservoir
- 9 Big Silver Creek Inflow to Union Valley Reservoir
- 10 Jones Fork Silver Creek Inflow to Union Valley Reservoir
- 11 SF Silver Creek Inflow to Junction Reservoir
- 12 Little Silver Creek Inflow to Junction Reservoir
- 13 Silver Creek Inflow to Camino Reservoir
- 14 Brush Creek Inflow to Brush Creek Reservoir
- 15 Brush Creek Inflow to Slab Creek Reservoir (including unnamed reservoir)
- 16 Slab Creek Inflow to Slab Creek
- 17 Iowa Canyon at SF American River
- 18 Rock Creek at SF American River