

Wednesday, January 28, 2009 (file cac191)

To: Dan Breedon

Fr: Ed Miller

Subj: Highlights of rural workshop on water resources, wildland fire management, Doe Mill Road upgrade, U.C. cooperative extension Master Gardener's graduation, Funding cutbacks, Butte College Jan27, 09

Ref A: P.Gosselin, Drought Task Force Report,
www.buttecounty.net/waterandresource/drought_info.htm

Ref B: California Department of Water Resources, Northern District planning and local assistance,
www.nd.water.ca.gov/PPAs/GroundwaterBasins/GroundwaterLevel/

Ref C: C. Fetter, Applied Hydrogeology, MacMillan

Ref D: W. Weaver, Handbook for Forest and Ranch Roads, Mendocino County Resource District 94

Background: The Butte College meeting provides a good overview of professional and volunteer activities that probably need to be reflected in the general plan or in expanded form for CAC members who will be reviewing the general plan in its final form.

Comments:

1. Butte County water delivery: Ref A describes current and potential drought condition monitoring and responses. There are many contractual agreements that govern water delivery. A typical agreement will allow a 50% reduction for Ag users under drought conditions. A 50,000 ac-ft/yr leakage from the Thermalito afterbay is being mitigated by 15 seepage recovery wells. Recovery has fallen to about 25% of the original design. 20-30K ac-ft/yr is recharging the underlying aquifer. The water year 2008 was the 15th driest out of the 88 year monitoring period. The Sacramento unimpaired runoff through December was about 1.4 million ac-ft or 47% of average. The Lake Oroville end-of-December storage is 982k ac-ft. Simplified database data on water availability and changing demands is available. Additional data is available from DWR.
2. Sacramento Valley groundwater: Dan McManus (office 530-529-7373, cell 530-945-0882, Fax 530-529-7322, mcmanus@water.ca.gov, located at 2440 Main Street Red Bluff CA 96080) is the senior engineering geologist for the Department of Water Resources northern district of California groundwater section. He has a staff of 8 including 4 hydro geologists with MAs. They maintain a four county basin management objectives information center (Butte, Glenn, Tehama and Colusa). They provide ground water hydrographs that look at seasonal fluctuations and long-term trends in addition to as-built logs. They have 70 dedicated monitoring wells and 170 individual wells that provide hourly data primarily from pressure sensors. An additional 450 wells are

sampled at longer intervals, typically summer- winter or spring-fall using acoustic pingers, floats and marker tapes. Based on personnel discussions, he indicated that many of the foothill and mountain fractured rock aquifers are undersampled. They do not have enough manpower to make measurements but if a group like the Forest Ranch area stakeholders got together, he would lend us one of their sounders/"electric tapes". Their present units have a range of about 300 feet. They are procuring an additional unit with a range of 700 feet. The actual maximum range is a function of the torque damping rings. Stakeholders who install small air pipes typically 5 feet above the submersible pump can also make measurements based on asymptotic pressurization. People may find that a pressure sensor is not too costly and is easier to manage. Artifacts like cavitation associated with pumping below the sensor level, test area flooding and nearby well activity need to be recorded. Well logs at the parcel level are confidential. He feels that this policy will eventually be abandoned but in the meantime, public data is amalgamated typically by section. Well log requests are handled by April Scholzen at 529-7368. Community wells in a common group of range 5-15 are handled by the State department of health with some guidance from DWR. DWR is a key player in the declaration of various levels of drought in our 4 adjacent county common aquifers. U.C. is involved in nuclear aging of water associated with long term trending. McManus is not aware of surface resistivity or electromagnetic surveys in Butte County. I suspect this is because built up areas with old garbage dumps and underground wiring create anomalies. He agreed that in very remote/pristine areas of fractured rock aquifers, these techniques may be applicable. In the expensive class, borehole measurements based on resistivity, natural gamma and neutron probes are of interest for high production community and irrigation wells (See Ref C, for additional insight). They have developed an interest in synoptic imaging in and around fault lines to identify likely drilling sites. McManus' chief complaint re to well drillers is delay/difficulty in reporting initial drilling data.

3. Chuck Kutz from the Butte Creek Watershed Conservancy described the before and after rehab images of Doe Mill and Garland Road between Paradise and Forest Ranch. This is a prime example of the benefits of about 10 coordinated agencies/groups making a significant improvement on a shoe string budget. Don't expect to tear over the rolling dips, outsloped road sections and water bars, but in the fire season a significant escape route for two wheeled vehicles is now available. Ref D is good guide for planning, designing, constructing, maintaining and closing wildland roads. The Doe Mill Road rehab is not ideal and is "shovel ready" for grant money.
4. Calli Jane Burch reviewed recent fire data and placed an emphasis on ember danger before and after the primary flame front passes over a structure. Embers may be a significant loss factor ½ hour before and 4 hours after the front passes.

Potential actions items:

1. Incorporate DWR data in the general plan with an emphasis on trend data.
2. Require well driller prompt reporting to the County and DWR initial and periodic measurement data from a required saturated water level sensor system.

3. Review the work of the Tehama RCD for inspiration and potential coordination of interface issues with Butte County.
4. Establish new construction basal area/stem density requirements.
5. Establish title 20, 24 and Butte County unique requirements with special emphasis on well defined wildland fire risk location.