Trip Report for Travel to Arizona from April 10th to April 13th 2006: Flagstaff and Phoenix HSAs

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ITINERARY: Traveled to Phoenix on Monday, April 10, 2006; and returned from Phoenix to Salt Lake City on Thursday April 13, 2006. During the week, **Tom Zickus, Senior Service Hydrologist, Phoenix**, accompanied me. Tom prearranged field logistics (including the borrowing of a 4-wheel drive) that provided for a very productive and conducive trip.

- Monday – Wednesday nights, lodging in Flagstaff.

Tuesday and early Thursday, **Tom Clemmons, hydro focal point, Flagstaff**, joined us.

Purpose: To visit river forecast points, meet with hydrologic customers, evaluate flood hazards at stream gages and at locations removed from the gages, and collect hydrologic data related to this season's water supply forecasts. Of special forecasting interest was a site visit to Chevlon Creek below Wildcat Canyon (CHWA3) located in an isolated area about 25 miles south of Winslow, AZ. See picture, looking downstream: gage located on right bank. Also of special hydrologic interest, was a site visit to the Grand Falls of the Little Colorado River---a discontinued USGS gaging site---to observed current drought-indicative flow conditions.

ACCOMPLISHMENTS:

Monday:

- Meeting with Mark Massis, Yavapai County Flood Control District in Prescott, AZ to discuss the county's ALERT system plans and flood forecasting needs.

- Visited Granite Creek sites: 1) near Prescott (GRCA3), 2) at Industrial Road (no gage), and 3) below Watson Lake (GRWA3).

- Visited new Yavapai County ALERT gage on Big Chino Wash at State Route 89 Bridge near Paulden, AZ (no Hand Book 5 ID).

- Visited Yavapai ALERT gage on Verde River at bridge near Perkinsville, AZ (no Hand Book 5 ID).

- Visited City Dam, one of two water supply dams, Williams, AZ (no Hand Book 5 ID).

- Visited Flagstaff Weather Forecast Office in Bellemont, AZ. Borrowed 4-wheel drive.

Tuesday:

- Visited Grand Falls of the Little Colorado River (Navajo Indian Reservation) and discontinued USGS gaging site below falls (LCGA3).

- Visited sites of flood issues on Navajo Indian Reservation: 1) Sunrise and Leupp in Coconino County, and 2) Bird Springs in Navajo County.

- Meeting with Homero Vela, Navajo County Flood Control District in Holbrook, AZ to discuss the county's ALERT system plans and flood forecasting needs.

- Visited Clear Creek near Winslow, AZ (CCWA3). This site is Clear Creek Reservoir; gage is on State Route 99 Bridge.

- Visited Clear Creek Below McHood Lake near Winslow, AZ (no Hand Book 5 ID). This site is below spillway for reservoir.

Wednesday:

- Visited Chevelon Fork below Wildcat Canyon, near Winslow, AZ (CHWA3).

- Observed snow conditions of Mogollon Rim (from State Road 99 we drove Forest Road 34 to Forest Road 300 to Forest Road 321 to Forest Road 96 to Forest Road 95 to State Road 87).

- At junction of Forest Road 96 and Forest Road 95, observed flow of East Clear Creek below Blue Ridge Reservoir. This one lane bridge was located approximately 1 mile downstream of reservoir.

- Observed snow conditions near Happy Jack SNOTEL site.

- Observed current water level of Mormon Lake.

- Observed Upper Lake Mary and Lower Lake Mary water levels.

Thursday:

- Meeting with Tom Heib and Collis Lovely, City of Flagstaff Stormwater Management to discuss Rio de Flag and stormwater flood issue. Tom Heib was formerly with Navajo County Flood Control District.

- Visited Rio de Flag ALERT gage (no Hand Book 5 ID).

- Returned 4-wheel drive.

- Visited New River near Rock Springs, AZ (NWRA3).

- Visited Phoenix Weather Forecast Office.

OFFICE VISITS:

Yavapai County Flood Control District: We discussed County's desire to have guidance at the following ALERT sites: Munds Park, Oak Creek below Pumphouse Wash, West Fork Oak Creek, Verde River at Perkinsville (visited), Granite Creek @ White Spar Campground, Walnut Creek at Williamson Valley Road (visited during a previous trip, see March 2003 report), Big Chino Wash @ SR 89 (visited), and Big Bug Creek @ SR 69. We discussed County's desire to have forecasts at two USGS gages: 09503000 Granite Creek near Prescott (GRCA3, visited, document in previous trip report), and 09503300 Granite Creek below Watson Lake near Prescott (GRWA3, visited, documented in previous trip report). The County informed us that 5-10 new ALERT gages would be installed by June 30th including Agua Fria at Black Canyon City (upstream of USGS gage 09512800 Agua Fria River near Rock Springs).

http://www.co.yavapai.az.us/YavEnterpriseSoln/FloodControl/StreamFlow.aspx

Navajo County Flood Control District: We discussed the AZ Statewide Flood Warning meetings and webpage (http://phxsrv4.afws.org/cgi-bin/beta/main.cgi), discussed County tentative plans to put in new ALERT gages, and discussed benefit of having recent County survey of Holbrook levee tied to datum for USGS gage (LHAA3, Little Colorado River at Holbrook).

City of Flagstaff Stormwater Management: We discussed the Upper Lake Mary inflow gage (not working), the Army Corps of Engineers plans for flood control of the Rio de Flag, were informed that the City of Flagstaff plans to install two new ALERT gages, and Tom Clemmons obtained a map of drainages within the City. After the meeting, the Toms and I visited Rio de Flag ALERT gage.

OBSERVATIONS AND FIELD NOTES:

Snow Conditions: The bottom line for the week was there was essentially no snow to be found in Northern AZ except for on the San Francisco Peaks: Humphrey Peak (11,940 feet), Agassiz Peak (12,300 feet), and Fremont Peak (11,940 feet).

Looking Southwest towards San Francisco Peaks from near Grand Falls of the Little Colorado River.
4/11/2006

Granite Creek: Since my last visit to Granite Creek sites the week of September 13th, 2004, major modifications have been made to the channel at Industrial Road (perhaps within the future defined reach for GRCA3). Before establishing GRCA3 as an official forecast site, the impact of the modifications may have to be further evaluated.

Big Chino Wash: New ALERT gage at State Route 89 Bridge near Paulden, AZ. Bridge is approximately 200 feet long and 15 feet high at low steel. Flow capacity of bridge estimated at 15,000 cfs. Flow at time of visit was 0 cfs. Tentative Minor, Moderate, and Major Flood Stages were determined to be 6 feet, 10 feet, and 14 feet (assuming 0 flow is 0 stage). These values should be revisited upon obtaining a rating table and Hand Book 5 ID for this site.

Big Chino Wash looking downstream. Flow is 0 cfs. 4/10/2006.

Big Chino Wash looking toward gage on left bank and upstream of bridge. 4/10/2006.

Verde River: ALERT gage near Perkinsville, AZ at bridge. This old bridge is approximately 400 feet long and 20 feet high. Flow at time of visit was approximately 25 cfs. Tentative Minor, Moderate, and Major Flood Stages were determined to be 6 feet, 8 feet, and 14 feet (assuming 0 flow is 0 stage). These values should be revisited upon obtaining a rating table and Hand Book 5 ID for this site.

Verde River near Perkinsville, looking towards right bank. Gage is on bridge support. Flow is approximately 25 cfs. Gage reading was 0.37 feet. 4/10/2006.

City Dam: This water supply dam for the City of Williams is considered unsafe and therefore, has remained essentially dewatered. The water level of the dam is monitored by an ALERT gage and current reading can be obtained from webpage: http://hydrolynx.co.yavapai.az.us/reports.html?FN=level. Water level at time of visit was 10.62 feet below datum (spillway).

City Dam looking at spillway and existing ponding behind dam. ALERT gage is located on far bank (right bank) and has no Hand Book 5 ID. 4/10/2006.

Little Colorado: The Grand Falls site was visited to evaluate the current Little Colorado River contribution to the local Lake Mead inflow (note: the Little Colorado River flows into the Colorado River below Lake Powell and upstream of the Grand Canyon). Flow at this site was 0 cfs. The upstream USGS gage, Little Colorado River near Winslow (LCWA3) was reporting 9.04 feet at 7.5 cfs. The downstream USGS gage, Little Colorado River near Cameron (LCCA3) was reporting 1.60 feet at 0.00 cfs. The Little Colorado River contribution to the local Lake Mead inflow for January 1 2006 to April 15 2006 has essentially been 0.0.

Grand Falls of the Little Colorado River looking from left bank to right bank. Flow was 0 cfs. When flowing, water would flow from right of picture to left of picture. Total drop is approximately185 feet. Discontinued USGS gage located below falls (see next photo). 4/11/2006.

Below Grand Falls of the Little Colorado River, looking downstream. Discontinued USGS gage (LCGA3) is located behind glove shaped rock at center of photo. Water did not appear to be flowing. 4/11/2006.

Clear Creek: The USGS gage (CCWA3) upstream of outlet was reporting 8.78 feet at 0.4 cfs. The new USGS gage downstream of outlet was reporting 1.92 feet at 4.5 cfs. The flow at the outlet was estimated to be 0.5 to 1.0 cfs. For water supply purposes the flow for April 1-15 2006 was estimated at 0.18 in thousands of acre-feet.

Outlet for Clear Creek Reservoir, a.k.a. McHood Lake, looking towards lake. Flow was 0.5 to 1.0 cfs. 4/11/2006.

Chevelon Fork: This USGS gage (CHWA3) has been reporting 0 flow since 5/17/2005. The USGS road log for this site is a little bit tricky and includes such directions as "turn left at relatively large group of junipers" and "note car tire in Juniper tree." However, without such directions this gage would be near impossible to find for someone other than a local. The gage is located on the right bank near the mouth of Wildcat Canyon. Currently, the gage bottom sits approximately 4.5 feet above water ponded in the scoured reach. Channel geometry is such that flow beyond the site will likely not occur until the in-channel-pond is filled to gage bottom. For water supply purposes the runoff at this site for January 1 2006 to April 15 2006 was estimated at 0.0. Minor, moderate, and major flood stages were determined to be 14 feet (9,500 cfs), 19 feet (20,000 cfs), and 21 feet (25,000 cfs). At this site bank full was determined to be 14 feet, the same stage as minor flood stage.

Chevelon Fork below Wildcat Canyon, near Winslow, AZ (CHWA3), looking towards right bank (downstream is near left edge of photo). Note upper most bathtub ring at 0 flow on canyon wall near gage. Flow is 0 cfs. 4/12/2006.

East Clear Creek: Since April 2005 the elevation of Blue Ridge Reservoir has been steadily decreasing from an elevation of 101 feet to an elevation of 84 feet. The spillway has not flowed since May 9, 2005. However, a small amount of water continues to be released from the base of the dam. Flow of East Clear Creek approximately 1.0 miles downstream of dam was estimated as 1 cfs.

East Clear Creek below one-lane bridge located approximately 1.0 miles downstream of Blue Ridge Reservoir, looking downstream. Flow in foreground was estimated at 1 cfs. Flow from tributary at right edge was estimated at 0.5 cfs. 4/12/2006

New River: The USGS gage, New River near Rock Springs, AZ (NWRA3) may be requested as a forecast point in the future. Flow at time of visit was reported as 0.2 cfs at 1.0 foot. Minor, moderate, and major flood stages were determined to be 10 feet (11,700 cfs), 12 feet (18,800 cfs), and 14 feet (28,000 cfs). At this site bank full was determined to be 8 feet.

New River near Rock Springs, AZ (NWRA3), looking upstream. 4/13/2006

NWSLIs:

We need official ids requested for the following:

lid: CCWA3 dcp: 17D737BE
name: CLEAR CREEK NEAR WINSLOW
lat: 345810 lon: 1103840 elev: 4861
usgs: 09399000

lid: needed dcp: DD89455E
name: CLEAR CREEK BELOW MCHOOD LAKE NEAR WINSLOW
lat; 345810 lon: 1103826 elev: 4840
usgs: 09399100

lid: needed dcp: 17D5B45E
name: CHEVELON CREEK NEAR WINSLOW
lat: 345535 lon: 1103151 elev: 4900
usgs: 09398000

And this one doesn't have a dcp on it, but we are using this id in our database and it is not defined in the NWSLID database, so it needs to be made official:

lid: CLWA3
name: CLEAR CREEK BELOW WILLOW CREEK NEAR WINSLOW
lat: 344003 lon: 1110025 elev: 5957
usgs: 09398500

Action Items:

1. Prepare trip report. Done.
2. Adjust mid-month Water Supply forecasts to reflect observed snow conditions. Done.
3. Update RIVERCRIT with new minor, moderate, and major floods for sites with valid Ids. Done.
4. Work with HSAs to obtain Hand Book 5 IDs for new sites. To be finished no later than June 2006.
5. The RFC role for City Dam needs to be revisited to insure Flagstaff WFO's expectations are clearly defined/understood.
6. Continue coordination/collaboration during Tom Zickus' visit to CBRFC in June.