

## Trip Report for Travel to Arizona including Visits to WFO Phoenix and WFO Flagstaff

### Itinerary:

- Traveled to Phoenix on Monday, November 26, 2001; and returned from Phoenix to Salt Lake City on Friday, November 30, 2001.
- Monday night -- Phoenix
- Tuesday night -- Flagstaff
- Wednesday night -- Prescott
- Thursday night -- Phoenix

### Accomplishments:

- 1) visited 10 river sites (including SLPA3, IDXA3, AFRA3, OAKA3, OACA3, DBVA3, CWWA3, and GIDA3) and determined tentative minor, moderate, and major flood stages;
- 2) visited Lake Pleasant (LKPA3) to observe current conditions;
- 3) visited Alamo Dam (ALMA3) including tour of dam by US Army Corps of Engineers (COE) dam operator;
- 4) took helicopter tour of Verde River and Salt River provided by Salt River Project (SRP);
- 5) visited Phoenix WFO;
- 6) visited Flagstaff WFO; and
- 7) visited USGS Flagstaff field office.

### Action Items resulting from trip:

- 1) provide Dallas Riegle, Senior Hydrologist, Salt River Project with new 30-year statistics for Salt River, Tonto Creek, and Verde River;
- 2) determine why Salt River - Priest Road forecast in SLCRVFMCT is different than forecast shown on web page, forecast on web page is correct;
- 3) consider reducing Clear Creek - Winslow water supply forecast to categorical since gaging station has been discontinued (data ending in 1991);
- 4) look into establishing RFC support for Little Colorado River – Joseph City (LCJA3) forecast point (this site is shown as data point only on our web page);
- 5) contact NRCS regarding their source of data for the Walnut Creek – Lake Mary (WLMA3) water supply forecast point;
- 6) look into utilizing Maricopa County's Bullard Wash ALERT gage (BLLA3) to enhance forecasting ALMA3 local inflow;
- 7) check into getting the rating curves for new Maricopa County's ALERT gages into our system (available at [www.fcd.maricopa.gov/alert/alert.htm](http://www.fcd.maricopa.gov/alert/alert.htm));
- 8) determine if we want to add recently installed gages to our system, e.g., Sols Wash at SR71--gaging was established on September 10, 2001;
- 9) check status of new dam break procedure being developed by CBRFC; and
- 10) upon request provide assistance to Flagstaff during a planned dam break exercise for staff.

### Observations and Field Notes (all sites visited with Tom Zickus, Senior Service Hydrologist, WFO Phoenix):

#### Salt River - Priest Road (SLPA3)

This site has received extensive flood proofing including the straightening of the channel and the raising of both banks. Upstream of the site is an artificial in-channel lake created by an inflatable dam. Up to a flow of 30,000 cfs, this dam will be incrementally deflated (note: 30,000 cfs corresponds to the critical stage of 9 feet). A minor flood stage of 17 feet corresponds to the 100-year flood flow of approximately 170,000 cfs. Moderate flooding would begin at 29 feet (top of banks).

Major flooding is proposed at 33 feet. WFO Phoenix will look into lowering the official flood stage (currently 29 feet) by extending the stream reach of concern to 4 miles upstream and to 15 miles downstream. USGS is currently exploring establishing a new gage near the confluence of the Salt with the Gila. This gage may become a future forecast point.

#### Indian Bend Wash - Curry Road (IDX A3)

This Salt River tributary flows into the artificial lake, see above. The floodplain has been modified and is a green area with golf courses. At Curry Road, minor flooding begins at 6 feet with overtopping of low berms. Moderate flooding begins at 7.5 feet (overtopping of culvert and local flooding of low road area). Major flooding begins at 14 feet when flow would threaten buildings.

#### WFO Phoenix

Visited briefly with MIC Tony Haffer and WCM Dave Runyan. Discussed plans for the week.

#### SRP Helicopter Tour of Verde and Salt Drainages

This tour was arranged by Dallas Riegler, Senior Hydrologist, Salt River Project, who accompanied Tom and me on the flight. This was an extensive helicopter ride that provided an aerial view of several dams, spillways, reservoirs, and gaging stations. After leaving Phoenix and seeing Granite Reek Dam on the Salt River, we went up the Verde drainage (Bartlett and Horseshoe Reservoirs) to "Verde River below Tangle Creek, Above Horseshoe Dam" (VDTA3) then crossed the divide to Tonto Creek, "Tonto Creek above Gun Creek, near Roosevelt, AZ" (TNRA3) and up the Salt River drainage to "Salt River near Roosevelt, AZ" (SLRA3) near SR 288. From here we went downstream (Theodore Roosevelt, Apache, Canyon, and Saguaro Lakes) to the confluence with Verde River and returned to Phoenix. Along the way we were fortunate to observe a large herd of javelinas and several isolated ruins.

#### Lake Pleasant (LKPA3)

Since the building of a new dam approximately five years ago, the lake capacity has been greatly increased. The old Waddell Dam is now below the surface of the new lake. Access to the new dam was not available.

#### Agua Fria - Rock Springs (AFRA3)

This site is 10 miles upstream of Lake Pleasant. There is a small mining operation downstream of the gage. There is a small in-channel pond at the gaging site. Stage at time of visit was 3.4 feet, corresponding to 5 cfs. Here we judged the flood stages to be 15 feet for minor, 19 feet for moderate, and 24 feet for major.

#### Agua Fria - Mayer (AFMA3)

We located the Agua Fria River near Mayer...but did not locate the gage before it got dark. The access road to the gage is presently overgrown according to USGS. I would like to find this gage at some future date.

#### WFO Flagstaff

Visited briefly with MIC Mike Campbell, SOO Mike Staudenmaier, and hydrology focal point Tom Clemmons. Discussed CBRFC's forecasts in Flagstaff's HSA including water supply and peak flow forecasts. Also discussed were WFO Flagstaff potential hydrologic public products.

#### USGS Water Resources Flagstaff

Visited with Hydrologic Technician Shirley Francisco to obtain directions to USGS gages. Also, inquired as to the status of the Clear Creek gage, and was informed that the USGS is establishing a new gage on the Little Colorado at Winslow. This new gage may become a future forecast point.

#### Oak Creek - Sedona (OAKA3)

Mike Staudenmaier and Tom Clemmons visited this site with us. Stage at the time of visit was 2.5 feet, corresponding to 31 cfs. The floodplain continues to be encroached upon. The bank opposite the gage has several buildings and parking lots. Here we judged the flood stages to be 15 feet for minor, 17 feet for moderate, and 20 feet for major. 17 feet is the current official flood stage. Further investigation is required before a change in official flood stage to 15 feet would be initiated.

#### Oak Creek - Cornville (OCA3)

Mike Staudenmaier and Tom Clemmons visited this site with us. Stage was 2.35 feet, corresponding to 27 cfs. A trailer park has been located upstream of gage within the last 6 years, i.e., established since the floods of 1993. We judged the flood stages to be 9 feet for minor, 12 feet for moderate, and 20 feet for major. Bottom of the bridge is 24 feet. These are relatively low flood stages that hopefully would allow timely evacuation of the trailer park.

#### Dry Beaver Creek (DBVA3)

In keeping with its name, Dry Beaver Creek was dry. We judged the flood stages to be 12 feet for minor, 18 feet for moderate, and 21 feet for major. The bottom of the bridge downstream was estimated to correspond to a stage of 18 feet at the gage.

#### Sols Wash at SR 71 (Maricopa County ALERT gage)

This is a Maricopa County Alert gage established on September 10, 2001. There are 3 box culvert under SR 71. Each culvert is 5 feet high by 10 feet wide. We judged the flood stages to be 5 feet for minor, 7 feet for moderate, and 10 feet for major.

#### Grass Wash - Aguila (Maricopa County ALERT gage - precipitation only)

Here we judged the flood stages to be 10 feet for minor, 14 feet for moderate, and 17 feet for major.

#### Alamo Dam (ALMA3)

At the dam we met with US Army Corps of Engineers dam operator Ken Moore. He showed us the various high water marks around the dam, as well as drove us on to the dam so we could observe both upstream and downstream. Release at the time of visit was 25 cfs. Lake elevation was 1106.9 feet. (Highest elevation for lake was 1207.65 feet during 1979 or 1980.) Of interest to our inflow forecast this summer, Ken reports that this summer the inflow was often from Bullard Wash, and infrequently from Big Sandy and Santa Maria Rivers. During a future field trip I would like to visit the ALERT gage on Bullard Wash.

#### Centennial Wash - Wenden (CWWA3)

Here we observed where a section of the town has been closed and trailers removed since the flash floods of last year, as well as the new gage. Here we judged the flood stages to be 6 feet for minor, 8 feet for moderate, and 10 feet for major. Extensive growth upstream of the highway bridge may exacerbate future flooding. Note: the flood levies built by the COE after the 2000 floods have been recently removed, i.e., leveled.

### Gila River - Dome (GIDA3)

Here there is an in-channel lake with a depth of approximately 9 to 11 feet. We judged the flood stages to be 22 feet for minor, 26 feet for moderate, and 30 feet for major.

#### Conclusions:

The field estimated minor, moderate, and major flood flows considered recent encroachments upon the floodplain not previously documented. The time elapsed since the last major flood on many Arizona streams has caused increased flood risks due to lack of awareness by new residents.

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