

Snowmelt Flooding Briefing Paper

Colorado Water Conservation Board – June 1, 2011

The threat for snowmelt flooding in Colorado should increase substantially beginning tonight, with the increased risk continuing, especially in the northern portion of the state, into the late part of June and possibly into early July.

The Colorado, South Platte, Yampa/White, Gunnison, and North Platte River basins currently have well above average levels of snowpack. Many snow measurement sites north of Interstate 70 set all-time records for recorded snow water equivalent (SWE) this year. Due to an unseasonably cold and wet May, a substantial portion of this snowpack remains on June 1st. In fact, many of these watersheds typically reach their snow maximums in early to mid April; however the above basins still contain snowpack greater than the average seasonal maximum as of today. This represents a potentially problematic situation regarding snowmelt runoff.

At the Flood Task Force meeting today (June 1, 2011) a discussion on historical flooding patterns, weather forecasts, and streamflow conditions took place with a number of technical experts representing local, state, and federal agencies. The following sections summarize the key points from the discussion:

Meteorological - Substantially warmer temperatures are forecasted to prevail statewide from June 1st through June 7th, with a short 24-36 hour cool down occurring on the 3rd and 4th. The majority of these days will have temperatures 10-15 degrees above average with mountain low temperatures remaining above freezing. The brief cool down will result in a short period of seasonal temperatures. Another cool down is expected on June 8th or June 9th lasting through the 13th. Following that, it is too early to predict temperatures with great certainty, but the potential exists for a late month warm spell.

Hydrological – Many rivers in NW Colorado are already at or near bankfull stage. Flood advisories or watches have already been posted for Mesa, Moffatt, Routt, Grand, and Jackson Counties, with more expected shortly. Lake County appeared on the watch list as well. Rivers in these areas will likely continue to rise due to forecasted warmer temperatures. In contrast, flows in the South Platte River basin have remained low so far due to cooler temperatures in May. Flows are expected to increase substantially during upcoming warm periods. It is expected that major rivers in northern Colorado will experience their highest flows of the year between now and June 10th. A “double peak” is possible this year. This would involve peak flows happening during the next week or so, then dropping off due to cooler weather, then increasing again later in June. Peak flows may be on the order of levels seen in 1984 or 1995.

Emergency Management – Most local emergency managers are fully aware of the situation and many have taken proactive measures to deal with the anticipated high water. They will continue to work with technical staff to be prepared to deal with flooding, if it occurs. The Colorado Division of Emergency Management has regional field managers to work with local governments, and these regional managers will serve as the liaisons with technical resources and then disseminate relevant information to the local levels.

Reservoir Operations – Many reservoirs in northern Colorado are already full, with partial pool evacuations to help deal with anticipated melt. Officials with the BOR and other agencies are managing their reservoirs to assist with flood peak reduction, where possible.