

**HASSAYAMPA RIVER AT US 60
FCD GAGE ID# 45707 (5228)**

STATION DESCRIPTION

LOCATION – The station is located in the town of Wickenburg on the right, downstream side of the old U.S. highway 60 bridge. The bridge is now a pedestrian bridge and does not carry traffic. Gages are located on the east side of the second pier from the left bank. This location is immediately downstream of the confluence with Sols Wash. Latitude N33° 58' 14", Longitude W112° 43' 31". Located in the SW1/4 SW1/4 SE1/4 S01 T7N R5W in the Wickenburg 7.5-minute quadrangle.

ESTABLISHMENT – The FCDMC station was established on March 14, 1994. Previously a crest-stage gage had been operated by the USGS in cooperation with the FCDMC from December 12, 1962 through water year 1980.

DRAINAGE AREA – 709 square miles.

GAGE – The gage is a pressure transducer type instrument. The elevation of the PT is 0.60 feet gage height, levels of September 20, 2018.

There is a painted staff gage viewable from the right bank. It is on most rightward pier. It displays in gage height, levels of September 20, 2018.

There are two working crest gages at this location. Both are located with the PT gage.

Crest gage #1 is the lower crest gage located near the PT. Pin elevation = 0.56 feet gage height, levels of September 20, 2018.

Crest gage #2 is the upper crest gage located near the PT. Pin elevation = 4.58 feet gage height, levels of September 20, 2018.

ZERO GAGE HEIGHT - Is based on the ADOT brass cap located on the southwest bridge rail. Zero gage height is equivalent to 2,034.970 feet NAVD88, levels of September 20, 2018.

HISTORY – Previously a crest-stage gage had been operated by the USGS in cooperation with the FCDMC from Dec. 12, 1962 through water year 1980. From 1962 to Mar. 1, 1978 the CSG was located on the left bank of the channel about 280 ft upstream of the bridge. The new CSG was reestablished on Aug. 16, 1978 on the US 60 bridge. Transducer gage was moved eastward in the channel about 150 feet on April 16, 2002. Crest gages were moved to the new location on April 18, 2002. A gage datum shift occurred as of April 15, 2002. PT elevation found at 1.59 feet on August 31, 2004. Previously it had been at 1.47 feet. No known change occurred. Bridge

construction in 2009 – 2010 caused the transducer and crest gages to be removed and replaced. Transducer and crest stage gages were re-installed on April 15, 2010 at the same location as established in 2002. Elevations of gages were surveyed January 5, 2011.

REFERENCE MARKS –

BM-5228 is an FCDMC brass cap located on the left bank near the sidewalk under the old US60 bridge. It is at elevation 7.363 feet gage height and 2,042.333 feet NAVD88, levels of September 20, 2018.

BM-5228-2 is an FCDMC brass cap located on the left bank upstream of the current US60 bridge. It is at elevation 19.200 feet gage height and 2,054.170 feet NAVD88, levels of February 6, 2018.

RM-1 is an ADOT brass cap located on the southwest bridge railing of the US60 pedestrian bridge near the station housing. The cap is stamped with elevation 2,057.23 feet MSL. Gage height elevation is 24.104 feet, levels of September 20, 2018. The cap was tied to the Wickenburg ADMS of 1989 and was at elevation of 2,056.71 feet MSL from a survey by Lehman and Donaldson on June 3, 1994 referenced from ERM 509. Elevation of this cap in new datum is 2,059.074 feet NAVD 1988.

RM-2 is the upper downstream bolt formerly holding crest gage #1 at the gaging location in 2002 and earlier. It has an elevation of 3.67 feet gage height, levels of August 31, 2004, and verified with levels of January 5, 2011.

RM-3 is an ADOT brass cap located north of BM-5228-2. It is at elevation 16.199 feet gage height and 2,051.169 feet NAVD88, levels of February 6, 2018.

RM-4 is a rebar protruding from the concrete along the sidewalk under the new US60 bridge on the left bank. It is at elevation 9.708 feet gage height and 2,044.678 feet NAVD88, levels of February 6, 2018.

RM-5 is a chiseled 'X' located streamward of a fence post on the concrete sidewalk near the left bank. It is painted white. Elevation 7.373 feet gage height, levels of January 5, 2011.

RM-6 is a chiseled 'X' on the right bank, upstream side of the new US60 bridge, on a horizontal surface. It is at elevation 11.522 feet gage height and 2,046.492 feet NAVD88, levels of September 20, 2018.

RP-1 is the lower downstream bolt of the support bracket of the upper crest-stage gage. Elevation 4.971 feet gage height, levels of September 20, 2018.

RP-2 is the lower downstream bolt of the support bracket of the lower crest-stage gage. Elevation 1.288 feet gage height, levels of September 20, 2018.

RP-3 is the lower upstream bolt that secured the pressure transducer, pre 2002. It is on the pier of the old US60 bridge near the right bank. It is at elevation 3.321 feet gage height, levels of September 20, 2018.

CHANNEL AND CONTROL – At low stages, there are several disconnected smaller channels that flow. Above about 1.5 feet gage height, the channel will combine into a single channel.

The stage-discharge relation at this site is effectively channel control for all stages. Sediment transport is very efficient for almost all stages. High velocities during moderate and large floods causes significant channel bed scour that creates additional cross sectional area as compared to the dry river condition.

RATING – The current rating is Rating #7. The rating is based on data collected from direct and indirect measurements done. Hydraulics of the channel at this location are difficult to quantify. Therefore, the best rating is probably developed from historical flood data collected. The rating is still considered poor.

DISCHARGE MEASUREMENTS – Can be made from the bridge. High velocities require angle adjustments to be made to the depth measurements even with the biggest weight we have (75 pounds). A decent indirect reach is located in the channel immediately downstream from the US 60 bridge.

POINT OF ZERO FLOW – The channel low point is near the pier with the transducer and is at about 0.5 feet gage height, levels of September 20, 2018.

FLOODS – Maximum of record September 5, 1970, estimated at about 52,000 cfs at this location at an estimated stage of 10.3 feet gage height (FCD datum). The September 26, 1997 flood peaked at about 15,400 cfs at 3.9 feet gage height. A flood of about 16,000 cfs at 4.3 feet gage height occurred on February 12, 2005.

REGULATION – Hassayampa Lake in the upper few square miles of the watershed regulates a small amount of runoff.

DIVERSIONS – Some in the upper part of the watershed near Wagoner.

ACCURACY – Poor to fair. The rating is poorer at lower stages, but improves at higher stages.

JUSTIFICATION – Flood warning monitoring for Town of Wickenburg.

UPDATE January 22, 2024
 E.S. Thomas