

**FLOW REGIME DISCUSSION
UNCOMPAHGRE RIVER AT WEST MAIN STREET
June 1, 2017**

Flow on the Uncompahgre River through the project area consists primarily of contributions from the Gunnison Tunnel/South Canal, releases from Ridgway Reservoir, and tributary stormwater flows. The nearest USGS stream gauge is located approximately 15 miles upstream of the project area near Colona, Colorado. However, this gauge is situated upstream of the South Canal's contributions (up to 1,150 CFS) with multiple irrigation canal diversions (taking up to 700 CFS) between the gauge and project area. As a result of these contributions and diversions, flow measurements at this gauge are not directly representative of flows through the project area.

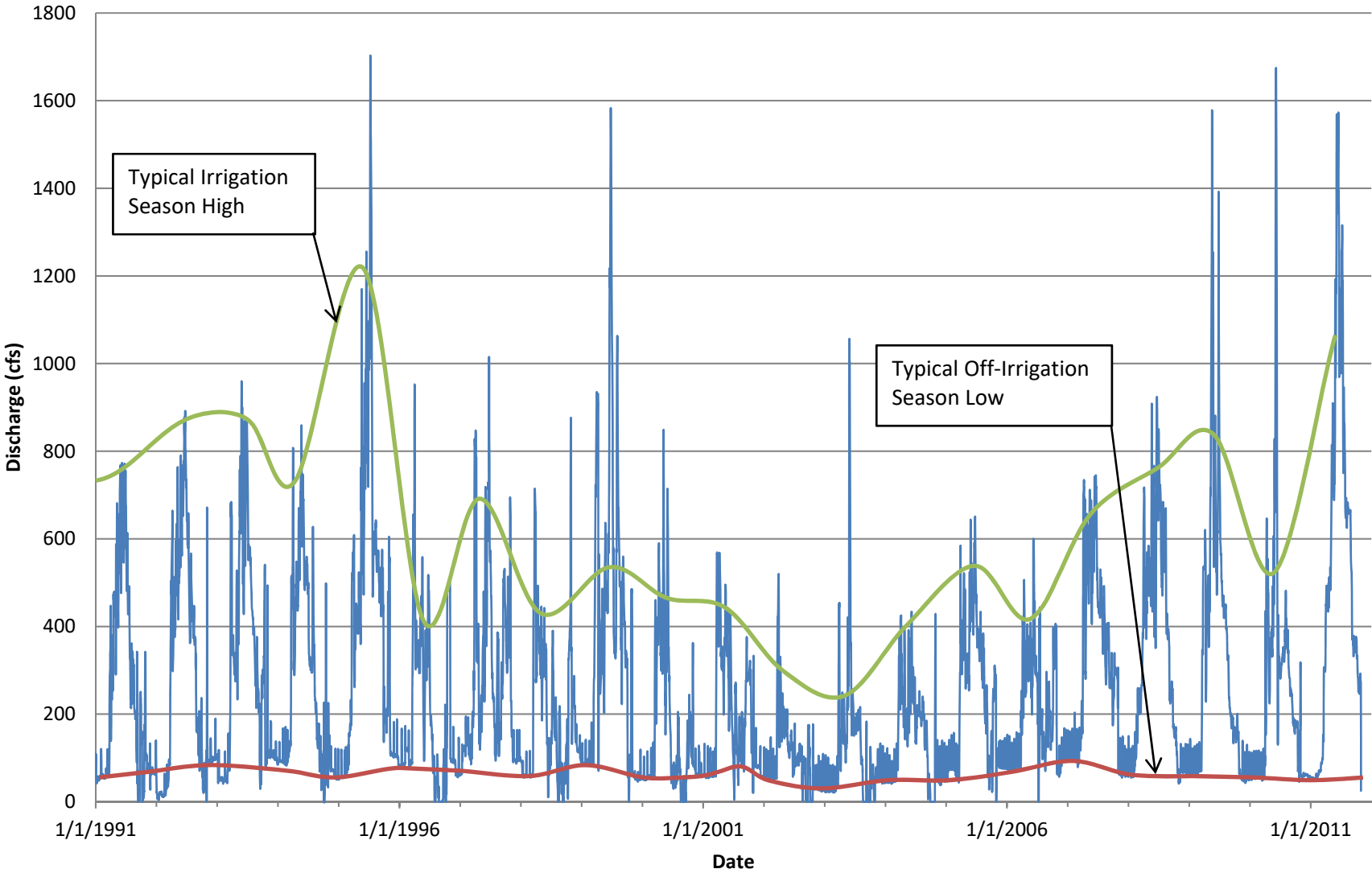
In order to account for the contribution of flow from the South Canal and reduction in flow resulting from the various diversions, the expected flow at the project area was calculated by taking discharge measurements at the Colona Gauge, adding contributions from the South Canal, and subtracting major diversion flows between the Colona gauge and project area. Flow records taken from the United States Geological Survey and the Colorado Division of Water Resources were used for these calculations.

A hydrograph showing the calculated flow at the project area dating back to 1991 is included as Figure A-1. Flow was not calculated prior to 1991 as these flows pre-date the construction of Ridgway Reservoir and are therefore not representative of modern-day flows. The minimum, maximum, and average flows at the project site for a given day over this same time period are shown on Figure A-2.

As shown in these figures, flows at the project area are drastically higher during the irrigation season (April through October) as a result of contributions from the South Canal and spring runoff/stormwater contributions that join downstream of Ridgway Reservoir. Uncompahgre River flows during the early irrigation season average around 450 CFS and taper down to 200 CFS by the late irrigation season. In the off-irrigation season, flows average around 75 CFS. Over the period dating back to 1991, the typical irrigation season highs have varied between 300 CFS in drought years to as high as 1,200 CFS in abundant years.

According to the Federal Emergency Management Agency's (2012) flood insurance study, the 100 year discharge on the Uncompahgre River within the City of Montrose is 5,000 CFS. Mapped floodplain and floodway areas are currently inaccurate due to migrations of the Uncompahgre River through the project area. It should be noted that these floodplain boundaries are being updated as part of the civil design studies being performed by Del-Mont Consultants.

Figure A-1: Uncompahgre River Hydrograph
City of Montrose at West Main Bridge
(Uncompahgre @ Colona + South Canal - Other Diversions)



**Figure A-2: Uncompahgre River Flow Stats at Main Street Bridge
(Uncompahgre @ Colona + South Canal - Other Diversions)**

