

Memo



To City Manager and City Council
From Carl R. Ray, Water and Wastewater Director
Date 11/07/2024
Subject **Raw Water Control Valve**

The Yampa River Corridor Project replaced the original diversion structure with three new instream structures. Structure #1 is over 1.5 feet higher in elevation than the previous structure. The vertical elevation increase affected the surface water elevation under all conditions. The new structures are beneficial during late summer and into fall and provide increased surface water elevation of approximately 6" according to the hydraulic model. We did not see a hydraulic model for high flow conditions, but physical observations in the Spring of 2024 showed a large increase in surface water elevation.

The increased surface water elevation led to the following three issues at the Water Treatment Plant: 1. Localized Flooding 2. Increased pressure in the raw water pipeline which in turn effectively decrease the system head and could lead to damage of the raw water pumps 3. The backwash ponds, which are connected to the raw water pipeline, would fill with river water unless isolated by valves which in turn prevented filter backwash or created difficulty performing the backwash without flooding. In a high snowpack year, it may be impossible to backwash filters which would effectively prevent us from operating the Water Treatment Plant.

The raw water pipeline has some gate valves that are not designed for controlling flow and elevation. The gate valves were placed in the line for isolation purposes. We have examined various possibilities and our engineering team feels that the best solution to the problem is to install a raw water control valve which consists of an electrically actuated plug valve in a vault on the grounds of the Water Treatment Plant. The location was chosen because of the need for electrical power and level feedback from SCADA to perform the adjustments. The engineering with the exception of construction observation is complete.

The project is estimated to cost \$270,020.00. We have been exploring grant opportunities and it may be possible to get a DOLA Tier I EIAF grant to help with the project. We might be able to receive matching funds from the Colorado River Water Conservation District (CRWCD) and/or the Colorado Water Conservation Board (CWCB).

The valve has an approximately 20-week lead time and the project needs to be completed by spring runoff to ensure our ability to produce drinking water. Ideally, we would secure funding first, but this project is very time sensitive. There is preliminary work that needs to be started as soon as possible.