

## United Water Missouri Water Treatment Plant

The United Water Missouri (UWM) Water Treatment Plant is a conventional treatment plant employing lime softening for hardness and turbidity removal. The existing plant was constructed nearly 70 years ago along the shore of the Missouri River. UWM retained Carollo to develop a plan for upgrading and rehabilitating the existing water treatment plant to meet the more stringent water quality requirements of the Safe Water Drinking Act.

Carollo based its recommendations on an exhaustive facility audit assessing the useful life of each treatment process. This included a regulatory compliance analysis to assess existing and future treatment requirements and the development of a facilities improvement plan that included replacement of old and worn-out equipment. Although the study focused primarily on plant upgrade options, it also included developing and analyzing alternative supply and treatment options utilizing alluvial and deep groundwater supplies. Because the proposed treatment plant modifications represented a significant capital expenditure to UWM customers, the study included a phased capital improvements plan (CIP) to implement the necessary upgrades.

UWM retained Carollo to implement the first phase of the CIP. This project included a mechanical, electrical, and instrumentation/control rehabilitation of the existing filter complex. Modifications included the installation of an innovative filter-to-waste process utilizing a backwash supply header and a filter-to-waste control valve and meter to provide a cost-effective solution to improving water quality for the eight existing filters. The project also included the construction of a new chemical handling and feed facilities for ferric chloride, sodium hypochlorite, and powdered activated carbon (PAC). The first project phase also included a new primary electrical feed and distribution system to improve the reliability of service.

### HIGHLIGHTS

Planning for upgrades to an 8-mgd conventional water treatment facility.

Mechanical, electrical, and instrumentation/control rehabilitation of the filter complex.

Innovative filter-to-waste process.

New chemical handling and feed facilities for ferric chloride, sodium hypochlorite, and PAC.

*Modifications to the United Water Missouri Water Treatment Plant will help the utility meet the future water quality and capacity requirements of its customers.*

