May 16, 2017

TO: Mayor and City Council

SUBJECT: Integrated Water Resource Planning Committee
Report to the City Council of its Findings and Recommendations

Our Consultant, Black & Veatch, Inc. has completed the Integrated Water Resource Plan (IRWP). The IRWP Committee met on April 28, 2017 to review and discuss the final report. The Final Report can be found at: **https://sites.google.com/a/como.gov/iwrp-committee/final-report-document**

By unanimous vote of those in attendance, the Committee voted to endorse the recommendation of Alternative No. 3 – Partial 16 MGD (Million Gallons per Day) Treatment Plant Expansion and Conservation.

This selection is supported by the following considerations taken from the report and findings of the Committee.

This report included review of known historical data and expected growth typical of a community like Columbia to establish a forecast for water supply requirements to the year 2040.

A conceptual model of the alluvial aquifer that supplies the McBaine Water Treatment Plant confirmed that the alluvial aquifer can yield at least 52 MGD from approximately 28 wells.

Prior to the beginning of the Committee's work, the department had authorized a Condition Assessment of the Well Field, Water Treatment Plant and West Ash Booster Pumping Station. This was used as a baseline to begin the resource planning. This assessment summarized the condition of the existing plant and costs to rehabilitate the plant to continue to provide reliable water supply to the city at the rated capacity of 32 MGD. It is estimated that $18 million dollars is required to improve operation, replace deteriorated equipment and increase reliability of the treatment plant. These costs are not dependent upon expansion of the existing treatment plant. As discussed in the Condition Assessment, without rehabilitation of the plant, specifically replacement of the original 1970's process equipment and electrical gear, the reliable capacity of the plant is in the range of 24 MGD. The plant rehabilitation improvements will bring the plant's reliable capacity to the 32 MGD level.

The partial 16 MGD expansion is a phased approach that would include initially constructing the process train (basins, filters, clear well, pump station) able to treat an additional capacity of 16 MGD, but the remaining treatment components, such as well field, associated well field pipelines, aerators, chemical feed systems be expanded only when needed based on demand needs. Many of these facilities, such as the wells and aerators, can be increased in capacity incrementally over time with minimal impact on operations.

As indicated, there is approximately $18 million in existing plant improvements required whether or not the plant is expanded. By building the infrastructure in place at the plant for the partial 16 MGD expansion in conjunction with the rehabilitation, some of these costs associated with the existing plant could be deferred, along with delaying the well field expansion until the supply is needed. This approach provides the most cost efficient and reliable method to meeting the city's water supply needs.

Alternative No. 3 and the rehabilitation would bring the potential capacity of the water treatment plant to 48 MGD.

A major reason expressed for Alternative No.3 is that it provides an opportunity for conservation to play a critical role in reducing costs without compromising the full 48 MGD build-out should it be needed in the future. To do this, 16 MGD basins will be constructed, however, the accompanying ancillary infrastructure will be strategically withheld from purchase, at least until such time as it is actually needed. It takes time to deploy and fully understand the impact of new conservation programs. This alternative provides the time to allow conservation efforts to take effect and be evaluated. New demand projections could be recalculated in 5-7 years to gain a more realistic view of , if and when completion of the full build out would be needed. The essential elements and approach for implementing a conservation plan are outlined in Section 6 of the report.

Landscape Irrigation presents a significant percent of the peak day demand, which is driving the need for new capacity in the proposed expansion of the Water Treatment Plant. Irrigation demand was closely examined and discussed by the committee, however, it was not totally clear to the committee how existing rate design recovers all the costs that are involved in irrigation, nor was any review given of the rates could play to reduce the demand for new capacity. The committee recommends to the Council that examination be made of what costs are attributable to irrigation and what irrigation users should be paying through water rates to cover their costs.

The committee expresses our thanks to the Council for the opportunity to participate in the city's first formal Integrated Water Resource Planning attempt.

John T. Conway

John T. Conway, PE – Chairman
Integrated Water Resource Planning Committee

Cc: IWRP Committee Members
City Clerk
Mike Matthes, City Manager
Tad Johnsen, City Utilities Director
John Glascock, Deputy City Manager