

Appendix J

Engineering Standards Review

TECHNICAL MEMORANDUM

TO: Greg Davenport, David Murphy
COPIES: File
FROM: Nathan Davis, Keith Larson
DATE: August 3, 2022
SUBJECT: Engineering Standards Review
JOB NO.: 041-21-01

REVIEW OF WEST JORDAN CITY WATER ENGINEERING STANDARDS

INTRODUCTION

As part of the 2022 update to the City of West Jordan's (City) Water Master Plan, the City requested that Bowen Collins & Associates (BC&A) review the City's current water engineering standards. The purpose of this review is to provide recommendations for improvement and not to draft the actual changes to the manual. If the City decides to implement these suggestions, they will draft and update the document internally. The purpose of this memorandum is to document the results of that review.

BC&A obtained the latest copy of the water engineering standards, "Engineering Policies & Design Criteria Manual, Part V – Water Policies & Design Criteria Manual" dated December 2005, from the City's website. The manual consists of eight completed sections and one "To Be Prepared" section, as follows:

1. Introduction and General policies
2. Design Criteria
3. Materials
4. Construction
5. Abandonment
6. Testing and Disinfecting Water Mains
7. Cross Connections & Backflow Prevention
8. Reservoirs and Pumping Stations
9. Water Conservation (To Be Prepared)

In additions to the sections of the manual listed above, there are five listed appendices, though only one is complete:

1. Appendix A – Standard Water Drawings
2. Appendix B – Water System Master Plan – Executive Summary (To Be Prepared)

3. Appendix C – Culinary Water Ordinance (Not Included)
4. Appendix D – Fire Flow Requirements for Buildings (Not Included)
5. Appendix E – Rules Governing Public Drinking Water Systems (Not Included)

SUGGESTED IMPROVEMENTS

Following the review of the water engineering standards, the following suggestions are offered for consideration.

Update Water System Information

Section 2 of the manual includes a description of the City’s existing water system. Since the publication of the manual in 2005, the City has grown significantly and will continue to do so until it reaches a buildout state. The section includes details related to reservoirs, pumping stations, JWCD connections, wells, and pressure reducing valves (PRV). With the exception of PRVs, the details of these items stay relatively constant, however, without a regular update newer infrastructure may be missing from this section. For PRVs, settings may be adjusted more frequently than changes to the other items. The section also references maps of the City’s system which are not included in the manual.

Each update of the City’s master plan should include a description of the City’s existing system up to that point in time. For simplicity, the manual may be able to simply reference the most up-to-date version of the master plan for this information. However, the master plan is typically updated every five years and keeping this information updated more frequently may be desired. If this is the City’s preference a separate existing system description could be created and updated as often as desired. BC&A’s recommendation would be to update this document annually.

Separate Specific Make and Model Requirements

Throughout the manual and Appendix A are references to specific makes and models of equipment to be used in the water system, such as tapping sleeves or valve boxes. Manufactures frequently make changes to the items they produce or models available. References to outdated product information can cause confusion for designers or result in the use of an unapproved device.

For clarity, BC&A recommends replacing references to specific items with a reference to an approved material list. This list will contain all references to specific materials approved for use in the water system and should be updated more frequently. City staff should review this list on a set schedule as well as when made aware of unavailable items. The published list should updated as often as necessary.

Conduct a Detailed Review of Appendix A

Appendix A contains many standard drawings for different portions of the City’s water system. The purpose of these drawings is to provide details to design engineers and contractors of specific ways that an item should be constructed. These details keep the distribution system consistent, which is a large benefit for City maintenance staff. The details also ensure that all local and building codes are met.

With the latest manual being over 20 years old it is possible that maintenance requirements or engineering standards have changed. BC&A recommends hiring a consultant to conduct a detailed review of the drawings, including consulting maintenance staff for changes that may be beneficial.

CONCLUSION

The design criteria manual is a valuable asset to the City. It provides details to design engineers and contractors to help promote a high quality water system. The suggestions detailed in this memo will allow the City to bring the manual up to date as well as simplify the information contained within so that it can stay up to date.