



## Arizona Water Company Water Report Checklist

### Service(s) on Existing Water Main

#### Cover Sheet

- Project Name: \_\_\_\_\_
- Prepared for: \_\_\_\_\_
- Prepared by: \_\_\_\_\_
- Stamped by registered Arizona Professional Engineer

#### Table of Contents

- A table of contents is used in the report.

#### Abbreviations

- List of abbreviations used in the report is included.

#### Introduction

- Arizona Water Company System (Service Area/<sup>1</sup>Pressure Zone): \_\_\_\_\_
- Project Name: \_\_\_\_\_
- Project location (include section, township and range): \_\_\_\_\_
- Project size (acres): \_\_\_\_\_
- General land use: \_\_\_\_\_
- Number of dwelling units or equivalent: \_\_\_\_\_
- Vicinity map clearly identifying project location.

#### Demand Calculation

- <sup>1</sup>Average day demand (ADD) is calculated using AWC's water demands per land use.
- Maximum day demand (MDD) is 2.0 x ADD.
- Peak hour demand (PHD) is 3.0 x ADD.

#### Fire Flow Requirement

- Fire flow required by fire authority (flow rate and duration); letter from the fire authority must be included as an appendix to the report.

## System Pressure

- <sup>1</sup>Pressure zone hydraulic grade (“HGL”) in the report matches pressure zone HGL in Company’s master plan.

## Water Model

- Show model results for existing mains up to fire flow test hydrant(s) to ensure AWC design criteria continues to be met in the surrounding distribution system.
- Description of the water model and the assumptions used in developing the model.
- Reference the fire flow test used for setting up the model if the water model evaluates connecting to the existing water system for water supply.
- Provide Calibration results that show that the model is behaving similarly to the fire flow test results.
  - When there are no demands being modeled, display a similar static pressure at the pressure hydrant junction as the test results.
  - Model the available flow at the flow hydrant junction and display a similar residual pressure at the pressure hydrant junction as the test results.
- Show model results for average day, maximum day, and peak hour scenarios.
- Minimum static pressure is 55 PSI.
- Pressure for all junctions for average day, maximum day, and peak hour scenarios are between 40 and 80 PSI.
- Minimum pressure during MDD plus fire flow is 20 PSI.
- Velocities for all water mains during MDD plus fire flow and PHD do not exceed 8-feet per second.
- Maximum headloss in transmission mains does not exceed 6-feet per 1,000 feet.
- Maximum headloss in distribution mains does not exceed 10-feet per 1,000 feet.
- Hazen Williams roughness coefficient for new water main is C=120.

## Fire Flow Model

- Clearly list fire flow requirement (flow rate in GPM and duration in hours).
- Show fire flow result for all hydrant junctions.
- Comply with fire flow requirement at all hydrant junctions.
- Pressure is greater than 20 PSI at all junctions for MDD plus fire flow scenario.

## Conclusion

- Summarize the key findings and proposed improvements discussed in the report.

## Appendices Demand Calculation

- Water demand calculations.

## Water Model Exhibits

- Overall development layout identifying parcels and street layouts and names.
- Clearly label all junction and pipe IDs.
- Color code all pipe by diameter.
- Identify any proposed water mains located outside of dedicated right-of-way if applicable.

## Model Results

- Average day: junction and pipe reports.
- Maximum day: junction, pipe and available fire flow reports.
- Peak hour: junction and pipe reports.
- All results sorted in numerical order by node or pipe ID.

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<sup>1</sup> Contact Arizona Water Company, Development Services Department to obtain requested information.

### **Project Submittals To:**

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