



Arizona Water Company Water Report Checklist

Master Plan with Water Infrastructure Facilities

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/¹Pressure 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

- ¹Average day demand (ADD) is calculated using Company'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

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

Water Supply

- Identify existing and proposed improvements to provide water supply to development.
- Minimum firm well production capacity is MDD with largest well out of service.
- Minimum water campus facility size is 5 acres.
- Minimum well site size is 150 feet x 150 feet (well only).
- Remote well site and property location plus transmission water mains required when well site is not located in the water campus facility.
- Maximum well discharge is 1,000 GPM per well or adjusted based on existing nearby company wells.

Water Treatment

- Description of the type of water treatment required.

Water Storage Tanks

- Minimum usable storage capacity is the sum of operational, fire, and emergency storage in each pressure zone.
- Operational storage is 30% of MDD.
- Fire storage is fire flow rate times duration.
- Emergency storage is 10% of MDD.
- Minimum of 2 water storage tanks (or space planned for 2).
- Smallest storage tank must provide the necessary fire flow when 2nd tank is out of service for maintenance.

Booster Pump Station (BPS)

- Minimum booster pump capacity is the larger of the MDD plus fire flow or PHD with the largest pump out of service.
- Minimum 2 variable frequency drives (VFD) per BPS.
- Hydropneumatic tank is required.
- Surge analysis is required.
- Backup generator is required.

Pressure Reducing Station

- Control valves sized for PHD at the continuous flow rating.
- Control valves sized for MDD plus fire flow at the intermittent flow rating.

Distribution Water Main Sizing

- 6-inch minimum diameter water main.
- 8-inch minimum diameter water main along mid-section line or equivalent or per AWC master plan.
- 12-inch minimum diameter water main along section line or equivalent or per AWC master plan.

Transmission Water Main Sizing

- 12-inch minimum diameter water main minimum, or subject to change based on project demands.

Water Model

- 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.
- Show model results for the distribution and transmission system.
- 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 by parcel.

Development Phasing and Land Use Maps

- Land use map.
- Parcel phasing map if applicable.
- Distribution water main phasing map, if applicable.
- Transmission water main phasing map if applicable.

Water Model Exhibits

- Overall development layout identifying parcels with street layouts and names.
- Well site
- Transmission water mains
- Water campus facility
- 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.

Preliminary Site Plan Layouts

- Well site locations with dimensions for 150 feet X 150 feet, walls, gates, and ingress/egress access.
- Water campus facility location with dimensions for 5 acres, including but not limited to water storage tanks, booster pump stations, water treatment equipment, generator, chemical area, stormwater retention, walls, gates, and ingress/egress access.

¹ Contact Arizona Water Company, Development Services Department to obtain requested information.

Project Submittals To:

Arizona Water Company
Development Services
3805 N. Black Canyon Hwy
Phoenix, AZ 85015
developmentservices@azwater.com