

Farmers Irrigation District

Pressure Pipe Standards Policy

EFFICIENCY

The measurement of efficiency for the District's water system is determined by dividing the total amount of water delivered on-farm through the sprinkler heads by the total volume of water diverted. The targeted efficiency is 0.95.

SPECIFICATIONS

Standard specifications and details will be available from the District for all systems, including piping, valves, and construction methods. The District on a case-by-case basis should approve any variances from the standard specifications.

PRESSURE & VOLUME

The target design working pressure to each turnout will be between 35 and 75 pounds per square inch (psi) at normal flow rates. Pressure reduction valves (PRV) will be included in the District system to achieve the targeted delivery pressure, and pressure relief valves will be located at the end of each lateral. It is a District goal to provide sufficient pressure to all agriculture water users at pressures sufficiently high to eliminate pumping, but limited pumping, in some isolated instances such as proximate to Farmers Canal, may continue to be required. The District will work with agriculture water users on a case-by-case basis as necessary to ensure acceptable water volume and pressure at all sites.

USER PIPES AND FITTINGS

All water user systems must be able to withstand 125.0 psi with safety provisions for pressure surges of up to 150 percent of 125 psi. The District must approve deviations from this standard. Pressure reduction valves can be fouled by sand or debris, thus allowing high pressures to pass through the valves. Pipe with the ability to withstand malfunctions of pressure relief or pressure reduction valves are required as is adequate thrust restraint. It is the water user's responsibility to protect his or her system from pressure surges.

The user may install additional pressure reducing valves, pressure relief valves, check valves, pop-off valves, or other control valves as deemed necessary to protect his or her piping and fixtures from abnormally high or low pressures or interruption of service consequent thereto. The District does not inspect the water user's lines or irrigation equipment, and the water user must address shortcomings in the water user's system.

METERING

Each turnout will have a device to control or monitor the rate and amount of water

delivered. The variety of sizes of water users precludes a standardized measuring device, but a measuring device is required. The District staff will determine whether a meter, orifice, or other measuring device is appropriate to individual service units. As part of its water conservation plan, the District requires metering at all diversions.

INTERRUPTIONS

All District Distribution Network (DDN) designs require valves located at regular intervals such that sections of the pipeline can be shut down without disrupting the entire system. In addition, backup systems and piping will be provided where possible so that alternate sources are available should a section have to be shut down.

PRESSURE REDUCTION VALVES

Pressure reduction valves are engineered into the DDN at intervals that will keep the working pressure within design limits.

SERVICE UNIT

Each Service Unit (SU) turnout will have a District shut-off valve, measuring device, PRV (if necessary) and a private shut-off valve. The addition of air and vacuum relief valves within the user systems may be required.

MINIMUM SERVICE UNIT

Each Minimum Service Unit (MSU) will have a single turnout that usually serves more than one user. A single measuring device will be incorporated to provide water in the amount of the total water right within the MSU.

EASEMENTS

All work shall be performed within District easements or rights-of-way. Where possible, the DDN will follow existing canals, ditches, and pipeline rights-of-way. Additional easements are encouraged in designing and installing the DDN if such easements would naturally reduce costs of installation. All easements shall include a construction right-of-way and a permanent easement for ingress and egress for inspection and maintenance. Easements shall be recorded with Hood River County Deeds and Records. Should an easement be required through a District user's property, the District expects a high level of cooperation from the user, and the costs of restoration of the property disturbed by installation of the DDN along the easement shall be assumed by the District.