

Everything You Need or Want to Know About a Drinking Water Facility: Where the Problems are

William Carr

Program Manager

Kansas Public Water Supply Loan Fund



Pipe – The Invisible Problem



Until It Is Visible



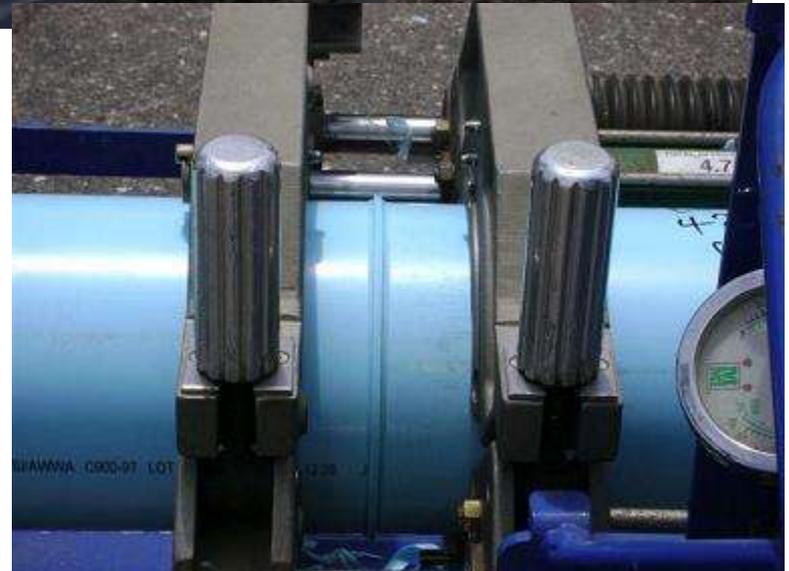
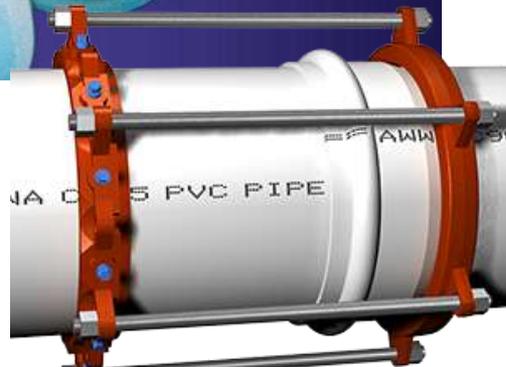
Or Directly Impacts Your Ability to Get to Work on Time



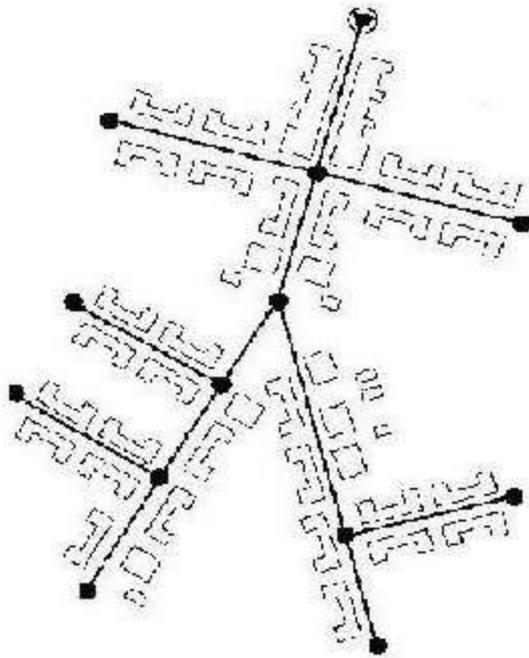
Pipe – Its Not All About Delivery



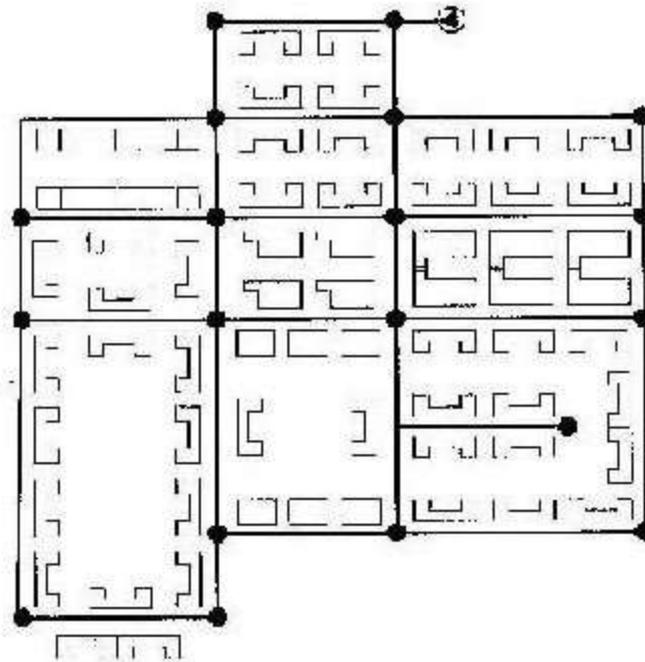
Plastic Pipe can still have problems



Pipe Condition Isn't Always the Problem

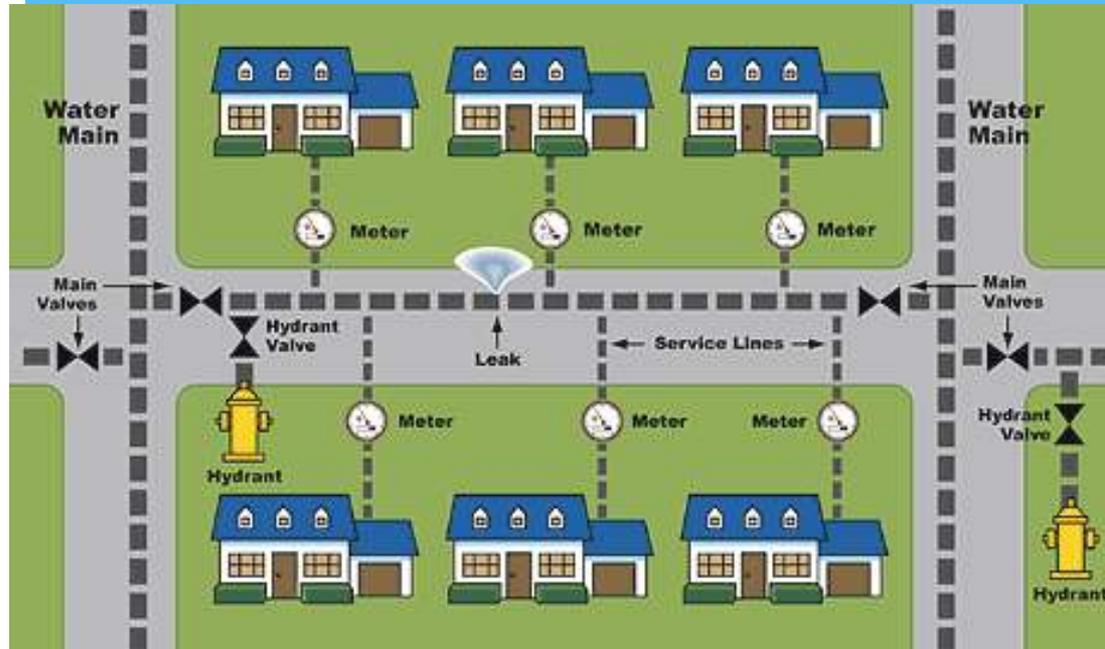


Branching Distribution System



Looping Distribution System

Valves - Unsung Heroes of Managing Distribution Systems





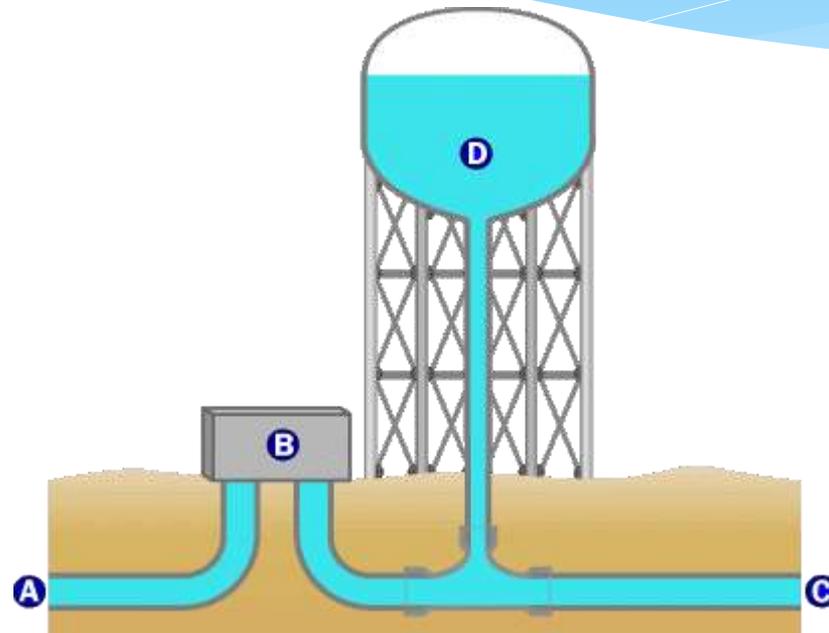
Storage Tanks – The Most Visible



But What Really Matters is on the Inside



Why Do We Even Need Storage?



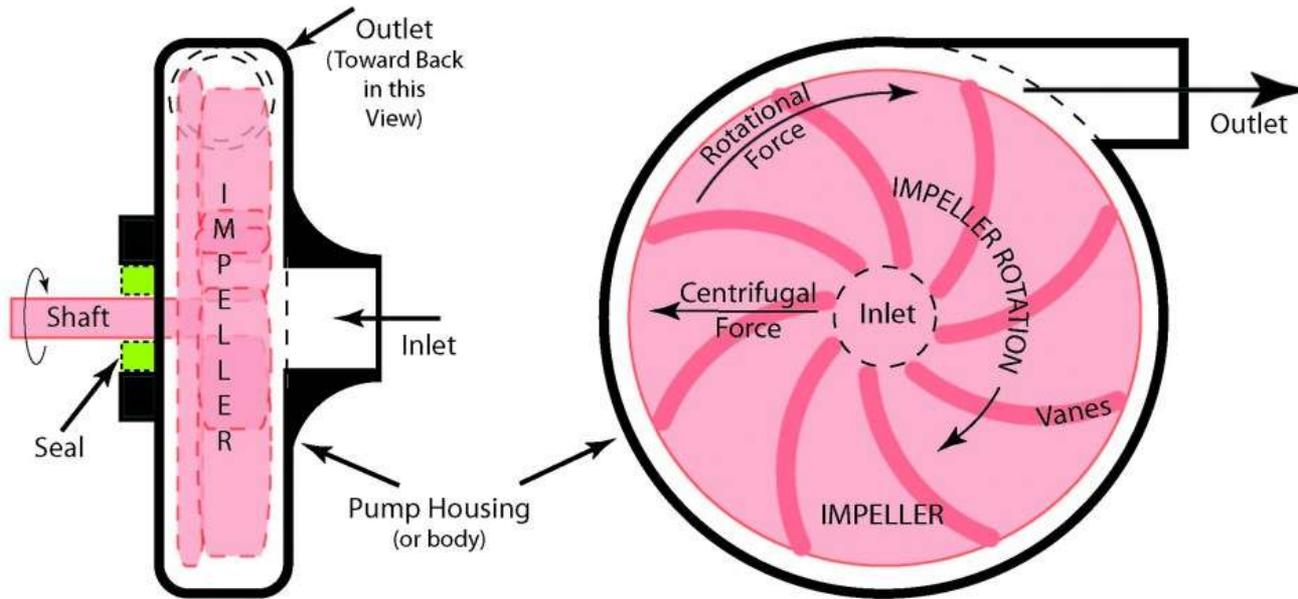
Pumps – Because Gravity Sometimes Works Against You



One of These is a Good Working Pump



How Pumps Work

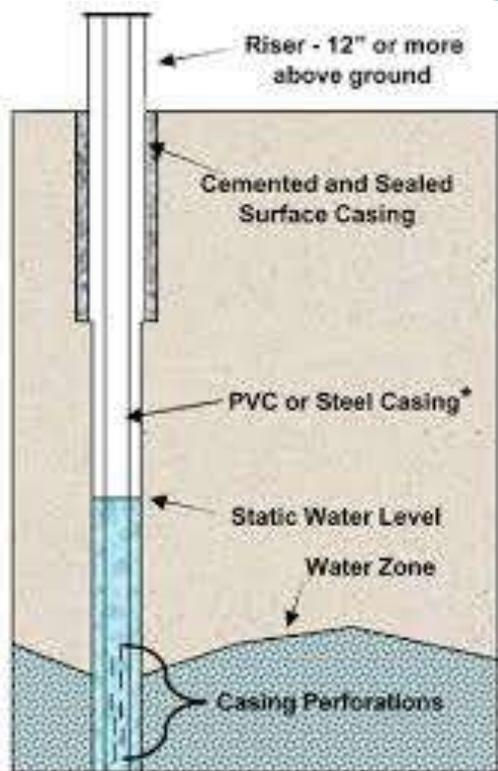


Real Pump Problems Part 2





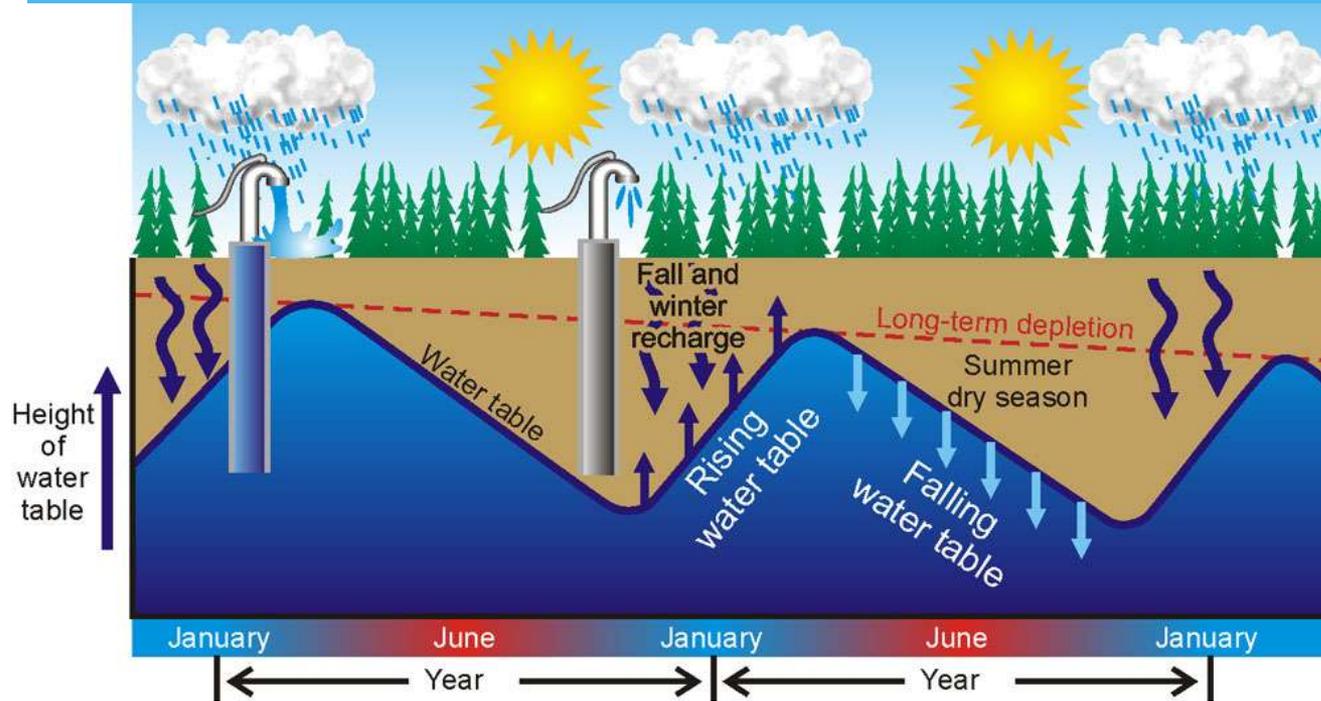
Wells



* Casing type used depends on drilling conditions and stability of the ground



The Well is Fine, But



Water Treatment Plants – Where to Begin

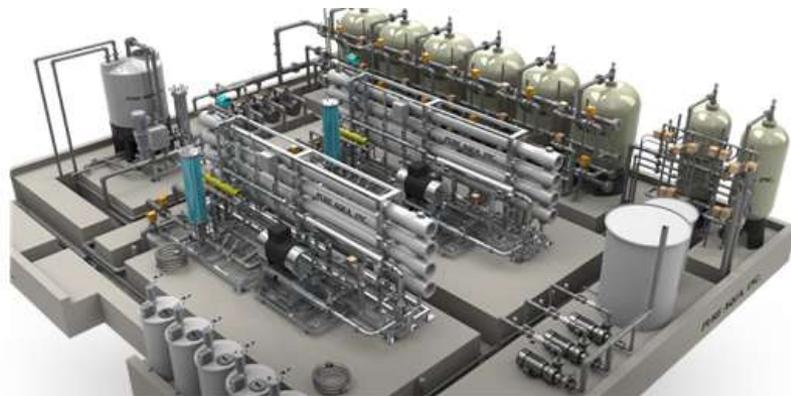
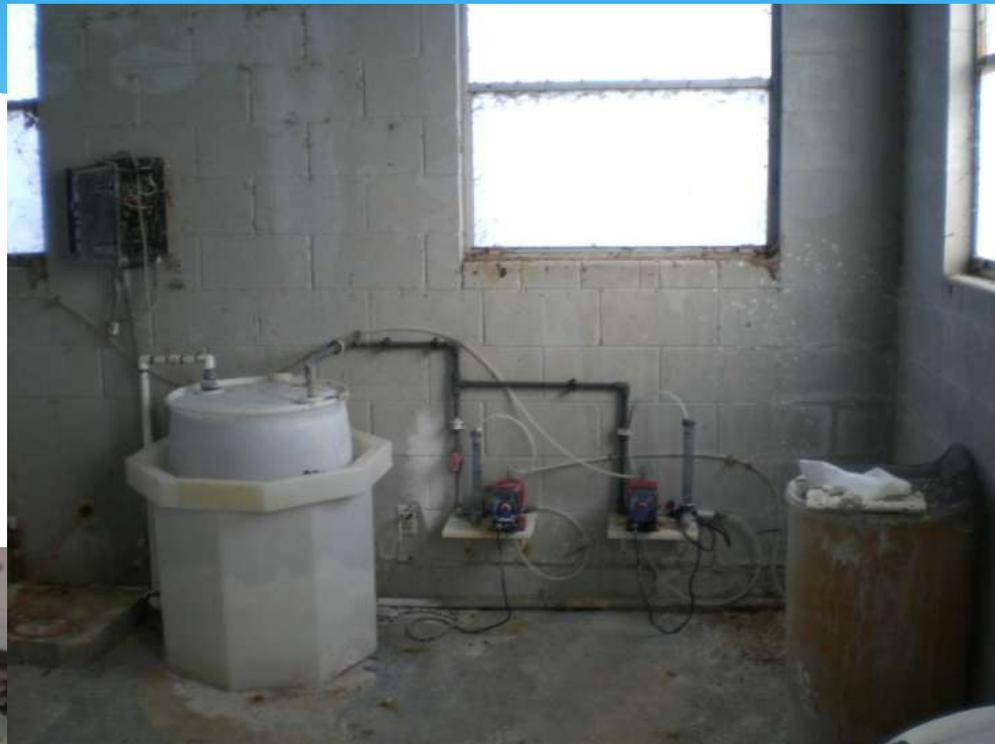


TABLE 1. U.S. Environmental Protection Agency regulations regarding drinking water, by year enacted — United States, 1974–2006

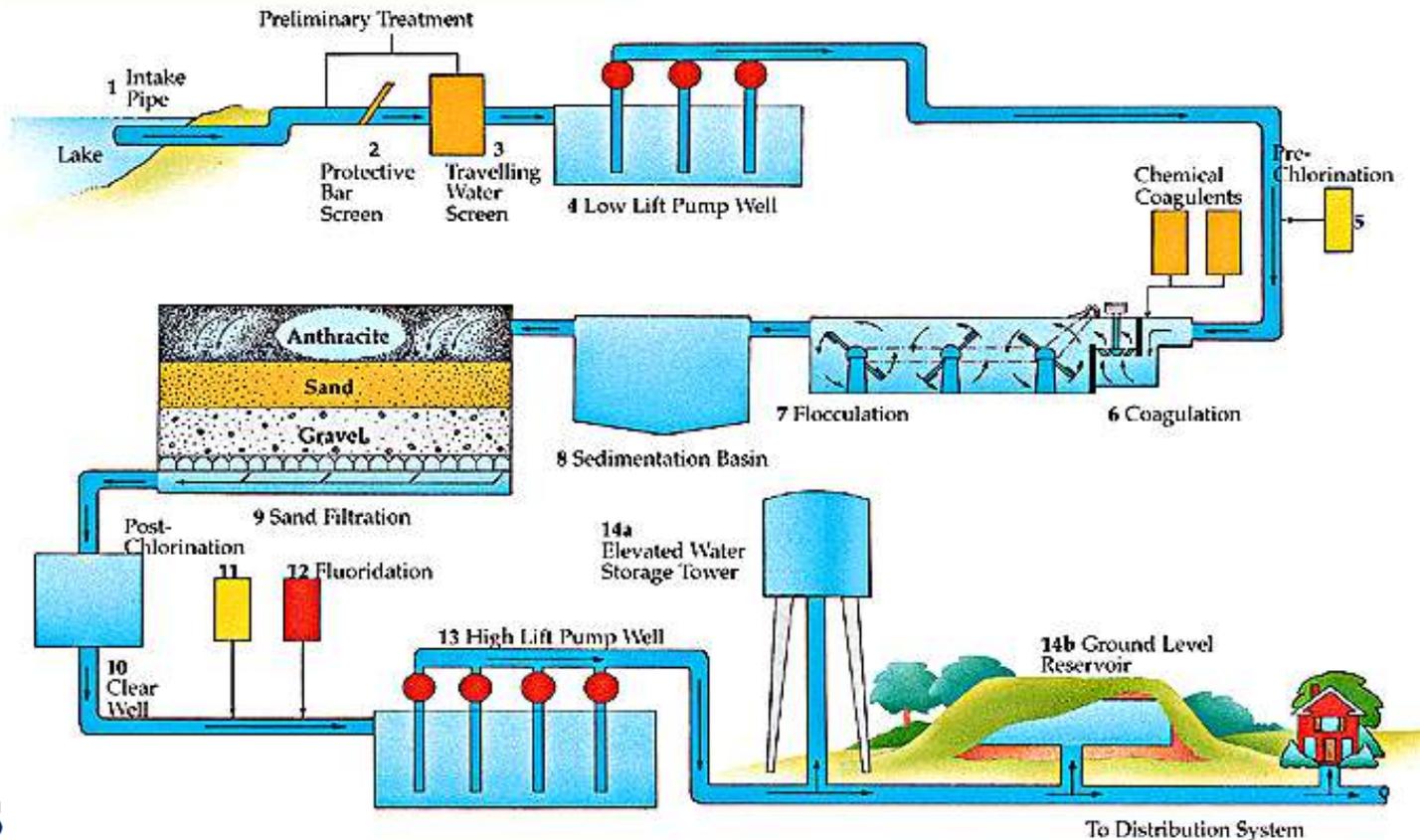
Regulation	Year
Safe Drinking Water Act (SDWA)	1974
Interim Primary Drinking Water Standards	1975
National Primary Drinking Water Standards	1985
SDWA Amendments	1986
Surface Water Treatment Rule (SWTR)	1989
Total Coliform Rule	1989
Lead and Copper Regulations	1990
SDWA Amendments	1996
Information Collection Rule	1996
Interim Enhanced SWTR	1998
Disinfectants and Disinfection By-Products (D-DBPs) Regulation	1998
Contaminant Candidate List	1998
Unregulated Contaminant Monitoring Regulations	1999
Lead and Copper Rule — action levels	2000
Filter Backwash Recycling Rule	2001
Long Term 1 Enhanced SWTR	2002
Unregulated Contaminant Monitoring Regulations	2002
Drinking Water Contaminant Candidate List 2	2005
Long Term 2 Enhanced SWTR	2006
Stage 2 D-DBP Rule	2006
Ground Water Rule	2006

Corrosion at Water Treatment Plants



Every Step of the Process will need Rehabilitation

WATER TREATMENT PLANT SURFACE WATER SUPPLY



Questions