

UNIDIRECTIONAL FLUSHING 101



What Is Unidirectional Flushing (UDF)?

UDF is a great way to flush contaminants and debris from a system by flushing water from a clean source working in one direction, one segment at a time.

Each UDF flushing sequence requires closing a series of valves to increase system velocities and move water in one direction, thus scouring the inside wall of the pipe and forcing all debris out of the system through one hydrant.

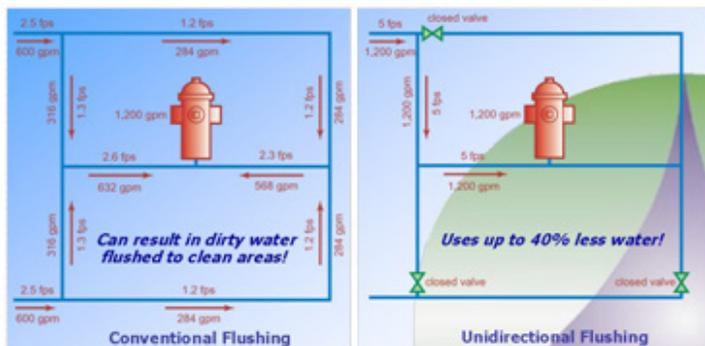


UDF Benefits

System buildup impacts not just water quality, but the system itself. As shown in the list below, UDF allows you to:

- Remove bacteria, sediments, deposits, biofilm, manganese, tuberculation, and other unwanted buildup
- Increase the diameter of the line and restore flows and pressures within the system
- Remove potential hazards in the system
- Restore proper color, taste, and smell
- Reduce customer complaints
- Identify where pipe should be replaced in system, due to significant tuberculation
- Improve public safety as it relates to fire flow
- Reduce potential health risks
- Decrease pumping costs
- Decrease pipe roughness
- Improve hydraulic capacity
- Reduced chlorine degradation rate

Conventional Flushing VS. Unidirectional Flushing



Conventional Flushing	Unidirectional Flushing
Water flows from all directions	Water is channeled in one direction
Low-flow velocities mean less scouring	Higher-flow velocities mean more scouring and better cleaning
Unable to control flushing direction	Ability to control flushing direction via systematic valve operation
Uses significantly more water than UDF by utilizing all hydrants	Uses up to 40% less water due to utilizing fewer hydrants than conventional flushing
Minor water quality improvements	Immediate improvement of water quality
Required flush time is longer than	Shorter flush time due to faster

One Solution to Multiple UDF Challenges

Implementing a UDF program is not without its challenges. The most common challenges utilities face are given below:

- Low valve operability (an inoperable valve is one that cannot be operated because it cannot be located, cannot be accessed, and/or does not work)
- Hydraulic models are incomplete or inaccurate
- Poor planning of UDF sequences
- Inexperience of staff to perform project
- Not enough time for staff to perform project
- GIS is not populated for all assets
- “We just can’t find stuff...”
- “We have lost control of the system...”

The Wachs Water Services Solution:

We have developed one solution that simultaneously addresses all of the previously mentioned challenges.

That solution: our workflow.

For nearly 15 years, working with utilities of all sizes, geographies, and nuances, Wachs Water Services has shown that the best way to guarantee a successful UDF program is to implement the following workflow:

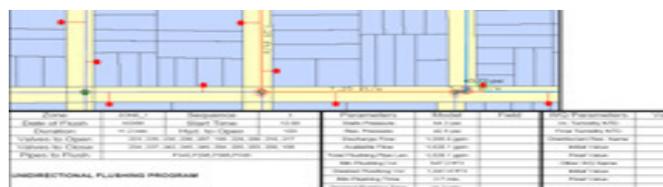
1. Assess Your Assets



2. Perform Criticality Analysis and Rehabilitate Assets



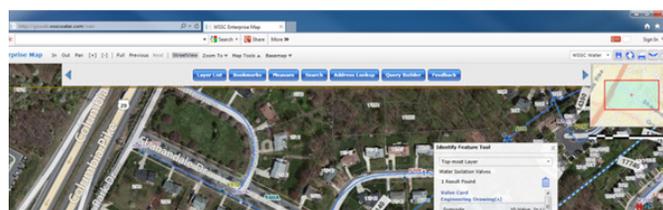
3. Create UDF Plan, Maps



4. Execute the UDF Plan



5. Document Results and Capitalize on Asset Management Information



Learn the details of our five-step workflow calling us at 800-525-5821 to learn more about our UDF program.