



The Flow Conditioning Device: Installation Point, Mechanism, and Meter Accuracy

Water Flow Innovations
LLC

Flow Conditioning Device (FCD)
waterflowinnovations.com

INSTALLATION POINT & MECHANISM

Installed Just After the Meter — Ahead of Every Validated Process System

The Flow Conditioning Device (FCD) installs between two pipe joints on the main water line immediately after your water meter — ahead of your facility's internal distribution to irrigation pump station feed, sprinkler mainlines, clubhouse and food service demand, and pool and maintenance supply. Each FCD is custom-built to the facility's exact specifications — pipe size, operating water pressure, and existing PRV configuration — and may include an integral check valve depending on the installation requirements. It requires no power and is installed by a licensed plumber or mechanical contractor with water off for approximately one hour.

Mechanically, the FCD creates a slight static back-pressure that extends back through the meter, reducing the air, gas, and turbulence that form during demand events and delivering a laminar-like flow profile through the measurement chamber. Municipal meters register volumetric displacement — entrained air and turbulent flow register as billable volume. Pressure loss through the device is under 0.8 psi across all flow conditions; downstream pressures, temperatures, and flow rates are effectively unchanged. Because the FCD sits just after the meter, it is outside your irrigation programming, agronomy plan, and clubhouse operations — no operational change is required. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ **Irrigation above agronomic requirements**

Metered irrigation use runs consistently higher than turf agronomic requirements predict.

☐ **Heavy spikes at season start**

Irrigation season start-up drives bills up disproportionately to actual applied water.

☐ **Sewer charges tracking water up**

Where sewer applies, charges follow the inflated meter reading upward.

☐ **Cost per hole or per acre above benchmarks**

Unit water costs persistently exceed GCSAA and regional course benchmarks.

☐ **Air at pump station or heads at start-up**

Visible air at the pump station or sprinkler heads — the same entrained air registers as billable volume at the meter.

☐ **Bills treated as uncontrollable**

Irrigation and clubhouse water are budgeted as uncontrollable costs.

WHERE OVER-READING HITS THE OPERATION

Irrigation Budget & Course Economics

Inflated intake flows directly into the irrigation budget — often a course's largest utility line — and clubhouse charges compound it.

Pump Start Demand Events

Irrigation pump starts and nightly cycle pressurization create exactly the high-velocity events that entrain air at the meter — every cycle, every season.

Audubon & Sustainability Programs

Course water stewardship reporting references metered intake — over-reading overstates true water intensity per acre.

Agronomy & Water Planning

Water windows, ET-based scheduling, and conservation projects start from a meter reading that includes volume that never arrived.

ENGINEERING Q&A

Q: Will the FCD affect irrigation pressure, coverage, or sprinkler performance?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of the pump station and course distribution. Head pressure, coverage patterns, cycle timing, and clubhouse supply are effectively unchanged.

Q: Why do bills spike at irrigation season start?

A: Start-up means pumps pressurizing drained or partially drained mains — the highest-velocity demand events of the year. Those events generate air, gas, and turbulence at the supply meter, billed as water. The FCD reduces the conditions that create them.

Q: We're on a well/reclaimed blend — does the FCD still apply?

A: The FCD corrects the municipal meter, so it applies to whatever portion of supply is municipally metered — clubhouse, potable irrigation supplement, or full supply. Well and reclaimed sources are outside municipal billing and unaffected.

Q: How do we estimate savings before bringing this to the board or ownership?

A: Use the Water & Sewer Bill Savings Calculator at waterflowinnovations.com for an instant projection, then request the free savings analysis — a documented, course-specific projection suitable for a board or capital committee package.

Q: How quickly do savings appear?

A: The meter reads accurately immediately after installation. Savings appear on the next full water and sewer billing cycle — no ramp-up period. 90% of installed customers reach full return on investment in under 12 months.

ENGAGEMENT PROCESS — FOUR STEPS

From Analysis to Verified Bill Reduction

1

Free Savings Analysis

We review your water and sewer bills and facility demand profile — no cost, no obligation.

2

Documented Projection

You receive a written savings projection specific to your facility before any commitment.

3

FCD Installation

Licensed plumber or mechanical contractor installs immediately after the meter — water off approximately one hour.

4

Verified Bill Reduction

Before-and-after bill comparison verifies the reduction on your next billing cycles.

GUARANTEE & WARRANTY TERMS

6-Month Money-Back Guarantee

If you're not satisfied within 6 months of installation, the FCD purchase is fully refunded — no questions asked. Installation labor is non-refundable.

Lifetime Transferable Warranty

The FCD carries a lifetime warranty, transferable to the new building owner if the facility changes hands (a transfer fee applies).

DEVICE SPECIFICATIONS

Construction, Certification & Installation

Custom-built to each facility's specifications — pipe size, operating pressure, PRV configuration · 316L stainless steel construction; titanium and specialty alloys available by special order for medical and other specialized applications · Configuration may include an integral check valve per installation requirements · No power required · Under 0.8 psi pressure loss · Certifications: IAPMO, NSF/ANSI/CAN 61, KIWA, GMP, SQF · Installed by licensed plumber or mechanical contractor

Regulatory & Standards References: GCSAA · Audubon Cooperative Sanctuary Program · EPA WaterSense