



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 HVAC & Facility System

The Flow Conditioning Device (FCD) installs between two pipe joints on the main water line immediately after your water meter — ahead of your store's cooling tower or chiller plant, restroom fixtures, and in-store food service equipment. 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 HVAC system specifications, facility operating procedures, and lease terms — no process change is required. Complete technical documentation is provided to support your internal review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

- ☐ **Water cost per square foot above comparable stores**
Water and sewer cost per square foot persistently exceeds comparable-format, comparable-size locations.
- ☐ **Sewer moves in lockstep with water**
Sewer charges follow the inflated meter reading — the over-read is billed twice.
- ☐ **Intake exceeds HVAC and restroom math**
Metered volume won't reconcile against cooling tower, restroom, and food service demand.
- ☐ **Pressure swings at cooling season startup**
Cooling tower makeup water demand produces visible pressure swings — entrained air registers as billable volume.
- ☐ **Audits confirmed usage, not the source**
Facility audits confirmed high usage without finding leaks or an operational cause.
- ☐ **Water treated as a fixed operating cost**
Water is carried as a fixed facility cost rather than a correctable line item.

WHERE OVER-READING HITS THE OPERATION

- Cost per Square Foot & Portfolio P&L**
Inflated intake flows into per-square-foot water cost — with sewer billed from the same meter, every over-read gallon is billed twice.
- HVAC & Restroom Demand Events**
Cooling tower makeup water cycling, restroom fixture demand, and food service use create multiple simultaneous entrained-air sources compounding across one large water service.
- The Audit That Finds Nothing**
Facility audits count water that arrives; over-read volume never arrived and is invisible to them — the source is the flow conditions at the meter.
- Multi-Level Pressure Zone Reporting Isolation**
Booster pumps and multi-level pressure zones run downstream of the meter — the FCD corrects billing accuracy with no effect on HVAC controls or building pressure management systems.

ENGINEERING Q&A

Q: Will the FCD affect our cooling tower, chiller plant, or in-store restaurant operations?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs immediately after the meter, ahead of building systems. HVAC performance, restroom fixtures, and food service operations are effectively unchanged.

Q: How does the FCD affect sewer charges?

A: Sewer charges are typically calculated from metered intake. When the meter over-reads HVAC, restroom, and food service demand, both charges are inflated. After installation, intake reflects actual consumption, reducing both line items.

Q: Does the FCD work with a multi-level building's booster pumps and pressure zones?

A: Yes. The FCD corrects meter accuracy at the water service entrance and works alongside your existing booster pump and pressure zone configuration without requiring changes to that system.

Q: How do I estimate savings before committing?

A: Use the Water & Sewer Bill Savings Calculator at [waterflowinnovations.com](#) for an instant projection, then request the free savings analysis — a documented, facility-specific projection suitable for an internal review 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 a new owner if the property or business 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

Industry & Standards References: National Retail Federation · International Council of Shopping Centers