



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 housing unit domestic supply, food service lines, laundry systems, and boiler and HVAC makeup. 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 security systems, facility operations, and inmate services — install requires only a scheduled one-hour water shutdown coordinated with facility operations. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ Bills rising without population increases

Water charges climb year over year with no corresponding change in facility population.

☐ Cost per inmate per day above benchmarks

Water cost per inmate per day persistently exceeds correctional facility benchmarks.

☐ Food service and laundry seem high

Kitchen and laundry consumption runs above what meal counts and load volumes predict.

☐ Sewer charges tracking water up

Sewer charges follow the inflated meter reading — the over-read is billed twice.

☐ Audits found usage but no source

Water audits confirmed high usage without identifying leaks or a clear source.

☐ Utilities treated as fixed line items

Utility costs are budgeted as uncontrollable fixed line items rather than managed inputs.

WHERE OVER-READING HITS THE OPERATION

Cost per Inmate & Facility Budget

Inflated intake flows directly into per-inmate operating costs and agency budget requests — billed on both the water and sewer side.

Taxpayer & Agency Accountability

Utility spending is publicly scrutinized — paying for water that never arrived is exactly the kind of cost an audit should eliminate.

The Audit That Finds Nothing

Fixture 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-Facility Benchmarking

Facility-to-facility comparisons across an agency are distorted when meters over-read differently — correction gives true numbers.

ENGINEERING Q&A

Q: Will the FCD affect water pressure, food service, laundry, or any facility operation?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of facility distribution. Housing unit supply, kitchen lines, laundry systems, and boiler makeup are effectively unchanged — daily operations are unaffected.

Q: What does installation require inside a secure facility?

A: The FCD installs immediately after the municipal supply meter — typically at or near the property line, outside secure areas. A licensed plumber completes the work in approximately one hour with water off, scheduled with facility operations. No inmate area access is required in most configurations.

Q: How does the FCD affect sewer charges?

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

Q: How do we estimate savings before requesting budget approval?

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 inclusion in a budget or procurement 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: EPA WaterSense · State & County Facility Utility Standards