



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 terminal HVAC and cooling tower makeup, restroom and concessions demand, aircraft and GSE wash systems, and ARFF fire suppression 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 ARFF readiness requirements, ACA accreditation scope, and terminal operations — no operational change or re-certification is required. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ **Cost per enplaned passenger above benchmarks**
Water cost per enplaned passenger persistently exceeds airport industry peer benchmarks.

☐ **Intake doesn't close against water balance**
Facility water balance studies show metered intake exceeding identified consumption and discharge.

☐ **Disproportionate peak-season spikes**
Water charges climb during peak travel seasons beyond what passenger volume alone explains.

☐ **Sewer charge high vs. actual drain volumes**
Discharge charges calculated from metered intake outpace what facility drain volumes support.

☐ **ACA water intensity above peer airports**
Airport Carbon Accreditation water intensity metrics run above comparable facilities.

☐ **Water treated as uncontrollable overhead**
Facility water is accepted as fixed overhead rather than a measured, controllable utility.

WHERE OVER-READING HITS THE OPERATION

Passenger Cost Metrics & Budget
Inflated intake flows directly into cost-per-passenger metrics and terminal operating budgets — billed on both the water and sewer side.

Discharge & POTW Compliance
Sewer and discharge charges under NPDES and POTW frameworks are calculated from metered intake — inflated readings inflate reported discharge.

ACA Accreditation & LEED Data
Airport Carbon Accreditation water metrics and LEED performance data reference metered intake — over-reading overstates true water intensity.

Facilities & Utilities Engineering
Water balance studies, leak programs, and terminal efficiency projects start from a meter reading that includes volume that never arrived.

ENGINEERING Q&A

Q: Will the FCD affect HVAC performance, aircraft wash pressure, or ARFF fire suppression readiness?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of your internal distribution. Cooling tower makeup, wash system pressure, and fire suppression supply are effectively unchanged — ARFF readiness is unaffected.

Q: Does installation require any operational or accreditation documentation change?

A: No. As a device installed just after the municipal meter, the FCD generally sits outside ACA accreditation scope and terminal operational requirements. Full technical documentation is provided for your facility change control process.

Q: How does the FCD affect our sewer and discharge charges?

A: Sewer charges are typically calculated from metered municipal intake. When the meter over-reads cooling tower makeup and peak-demand events, reported discharge volume is inflated. After installation, metered intake reflects actual consumption, reducing both charges.

Q: Can documented savings support ACA levels and sustainability reporting?

A: Yes, as cost documentation. Before-and-after utility bills verify the corrected billing. Because the FCD corrects the meter reading rather than reducing water use, confirm with your sustainability team how to report it for ACA submissions, LEED data, and CDP disclosure.

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: Airport Carbon Accreditation (ACA) · EPA NPDES · LEED · NFPA Fire Protection Standards

FREE SAVINGS ESTIMATE

Instant estimate — takes 30 seconds, no contact info required.
waterflowinnovations.com/water-bill-savings-calculator

Water Flow Innovations LLC
2651 Route 412
Coopersburg, PA 18036
Info@WaterFlowInnovations.com
1-(844)-934-8258

CERTIFICATIONS

IAPMO

NSF/ANSI/CAN 61

KIWA

GMP

SQF

316L Stainless Steel · Made in USA
Under 0.8 psi pressure loss
Lifetime Transferable Warranty