



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 wash station and pressure-wash supply, dockside water pedestals, travel lift and haul-out wash headers, and facility building demand. 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 wash operations, dockside service, and Clean Marina program practices — 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

☐ **Cost per haul-out above benchmarks**

Water cost per haul-out or per boat wash persistently exceeds marina benchmarks.

☐ **Disproportionate haul-out season spikes**

Bills climb during peak haul-out season beyond proportional wash demand.

☐ **Intake exceeds documented use**

Metered intake exceeds documented wash and facility use volumes.

☐ **Sewer high relative to drain discharge**

Sewer charges calculated from metered intake outpace actual marina drain volumes.

☐ **Portfolio outliers per slip**

Portfolio benchmarking flags marinas with unexplained high water costs per slip.

☐ **Water accepted as seasonal overhead**

Marina water is treated as uncontrollable seasonal overhead.

WHERE OVER-READING HITS THE OPERATION

Cost per Haul-Out & Slip Economics

Inflated intake flows directly into haul-out pricing assumptions and per-slip operating costs — billed on both the water and sewer side.

Pressure-Wash Demand Events

Pressure washer and wash station cycling create exactly the high-velocity events that entrain air at the meter — all season.

Discharge & Clean Marina Data

Discharge charges and wash water program documentation reference metered intake — over-reading inflates both.

Multi-Marina Benchmarking

Marina-to-marina comparisons are distorted when meters over-read differently — correction gives true per-slip numbers.

ENGINEERING Q&A

Q: Will the FCD affect wash station pressure, dockside delivery, or travel lift wash performance?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of marina distribution. Pressure washer supply, pedestal delivery, and haul-out wash performance are effectively unchanged.

Q: Why does haul-out season spike beyond actual wash volume?

A: Season brings constant pressure-wash cycling — the highest-velocity demand events the marina meter sees, generating air and turbulence billed as volume. Part of the seasonal spike is water that never arrived.

Q: How does the FCD affect our sewer charges?

A: Sewer charges are typically calculated from metered intake — but much marina water goes to wash pads with separate handling, not sanitary drains. Over-reading inflates an already mismatched calculation; correction reduces the volume basis.

Q: Does this interact with our Clean Marina certification?

A: No practices change. If anything, accurate intake data strengthens the water stewardship documentation many Clean Marina programs encourage. The FCD is a device installed just after the meter, ahead of all wash water handling.

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: Clean Marina Programs · EPA NPDES · Association of Marina Industries