



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 water rides and features, guest restrooms and food service, irrigation and landscaping, and nightly wash-down. 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 ride operations and safety systems — installation is scheduled before opening or in the off-season with minimal guest impact. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

- ☐ **Water cost per guest above targets**
Water and sewer cost per guest persistently exceeds park comparables.
- ☐ **Sewer moving in lockstep with water**
Sewer charges follow the inflated meter reading — the over-read is billed twice.
- ☐ **Intake exceeds attraction demand math**
Metered volume won't reconcile against ride top-off, guest services, and irrigation demand.
- ☐ **Audits confirmed usage but not the source**
Facility audits confirmed high usage without identifying leaks or a source.
- ☐ **Pressure swings at opening surge**
Morning fill, guest surges, and wash-down draw produce visible pressure swings — entrained air registers as billable volume.
- ☐ **Water treated as uncontrollable**
Water is budgeted as a fixed cost of operations rather than a correctable one.

WHERE OVER-READING HITS THE OPERATION

- Cost per Guest & Park Economics**
Inflated intake flows into cost per guest — with sewer billed from the same meter, every over-read gallon is billed twice.
- Peak-Season Demand Events**
Ride top-offs, restroom surges, and nightly wash-down create exactly the events that entrain air at the meter — every operating day.
- 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.
- Sustainability Reporting**
Corrected intake gives accurate water-use data for park sustainability reporting — a data-accuracy correction, not reduced use.

ENGINEERING Q&A

Q: Will the FCD affect ride water levels, feature operation, or guest services?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of park distribution at the meter. Ride fill, feature operation, and every guest service are effectively unchanged.

Q: What does installation involve for a park with an operating calendar?

A: A licensed plumber installs the FCD at the meter in approximately one hour with water off — scheduled before opening or in the off-season like any brief maintenance window. Minimal guest impact.

Q: How does the FCD affect sewer charges?

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

Q: How do we estimate savings for the park 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, park-specific projection suitable for an operations 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 · IAAPA