

Safe Water Doesn't End at the Filter

A Behavior-Enforced Drinking Water System for Schools & Communities

Why treating water alone fails – and how Smart X closes the last-meter gap



Most water projects fail after the tap.

Clean water collected in dirty containers becomes unsafe again.



- ✓ Jerrycans are rarely cleaned
- ✓ Biofilm + fecal contamination persist for weeks
- ✓ Recontamination happens after treatment
- ✓ Communities blame the water system, not the container

Why Training Does Not Work

Education cannot compete with habit, time pressure, and queues



SKIPPED



- ✓ “Please wash your jerrycan” is ignored under pressure
- ✓ Behavior changes only when the system enforces it
- ✓ Safety must be physical, not instructional

**If safety depends on behavior,
safety will eventually fail.**

Safety Must Be Enforced by Infrastructure

No reliance on:

- ✓ Training
- ✓ Signage alone
- ✓ Goodwill



This aligns perfectly with our
“assume misuse” doctrine.

The Flush → Fill System

Nobody can fill drinking water unless their container has been disinfected first.



**High-chlorine
Flush Tank**
(2–3 mg/L)



**High-chlorine
Flush Tank**
(2–3 mg/L)



**Low-chlorine
Drinking Tank**
(0.3–0.5 mg/L)

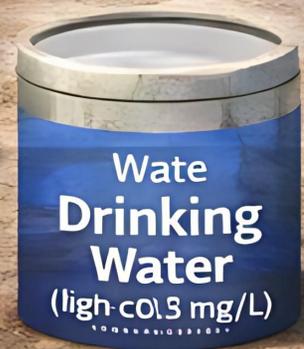
This aligns perfectly with our
“assume misuse” doctrine.

Distance is a safety feature

Two stations, 3–4 meters apart.



- High chlorine disinfection only



- Safe residual (0.3–0.5 mg/L)

You cannot “accidentally” skip flushing.

How People Actually Use It

What happens on the ground



1 Queue at Flush Station

- ✓ High chlorine (2–3 mg/L)
- ✓ For container disinfection only

2



You cannot “**accidentally**” skip flushing.

Design truth: People already queue. You’re just guiding the queue correctly.

Why This Works (Public Health Logic)

This breaks the recontamination loop



Flush water kills pathogens inside the container



- 1 Lower **diarrhea** incidence
- ✓ Higher trust in water source
- ✓ Better real-world outcomes



We treat the water and the container.

Smart X doesn't just deliver clean water It delivers **safe outcomes**



Flush water
kills pathogens
inside the container



Drinking water
maintains residual
protection



**Clean water is not enough.
Safe use is the real goal.**