Combined Sewer Overflow (CSO) Long-Term Control Plan

"A Broader Lens, a Better Plan"

In Brief

The original CSO Long-Term Control Plan (LTCP) was a turning point for the region's water quality. Court-ordered and community-supported, it eliminated 84% of overflow volumes and ensured that 96% of what remained was captured and disinfected — transforming Boston Harbor from a national embarrassment into a national success story.

What followed was a post-construction monitoring and maintenance phase — a regulatory bridge between past performance and future priorities. That phase reviewed long-term data, updated storm modeling, and triggered a new planning round to assess whether further investments might be needed. Today, MWRA and its partner communities are weighing a new suite of proposed projects — totaling up to $4.7 billion — to target the remaining CSO discharges under projected 2050 climate conditions.

But the problem has evolved. CSOs may still be visible and regulated, but they are no longer the only — or even the greatest — threat to system performance or water quality. Sanitary Sewer Overflows (SSOs), groundwater infiltration, aging infrastructure, and overwhelmed stormwater systems are increasingly driving real-world failures. These are the causes behind backups in basements, sewage on shorelines, and unacceptable burdens in Environmental Justice communities across the MWRA system. And they are often outside the scope — and funding structure — of this CSO-focused program.

The Advisory Board believes that if we fail to widen our lens now, we will spend billions and still fall short. We support new investments — when they are justified, cost-effective, and designed to meet the full challenge ahead. Our region doesn't just need fewer gallons. It needs smarter gallons. Fairer gallons. And dollars that deliver real protection for the people and places who need it most.

In Depth

A National Model of Success

The original Combined Sewer Overflow (CSO) Long-Term Control Plan (LTCP) was one of the most transformative clean water efforts in the country. Court-ordered but regionally owned, it reduced overflow volumes from 3.8 billion gallons to just over 1 billion. MWRA now estimates that **1.056 billion gallons** are captured and disinfected each year under Typical Year conditions. (MWRA CSO Control Summary)

The total cost of that program, adjusted to 2024 dollars, was approximately **$1.52 billion** — resulting in a cost of just **$1.44 per gallon controlled**. The payoff wasn't just financial — it was environmental, social, and reputational. Boston Harbor went from national embarrassment to national success story, and MWRA became a model for regional infrastructure investment that works.

[Insert: Bar chart comparing $/gallon – Original LTCP ($1.44) vs. Proposed ($23.50)]

From Progress to Planning

After the original LTCP was completed, MWRA entered a post-construction monitoring and maintenance phase — a regulatory bridge between past performance and future possibility. This phase, consistent with EPA's national CSO policy

guidance, was designed to verify long-term effectiveness, evaluate any lingering impacts, and prepare for future conditions using real-world data and updated modeling. (EPA CSO Control Policy)

It wasn't a mandate to build — but it was a chance to step back and ask: if we invest again, are we doing it in the right places, for the right reasons, with the right dollars?

That question frames the challenge before us now.

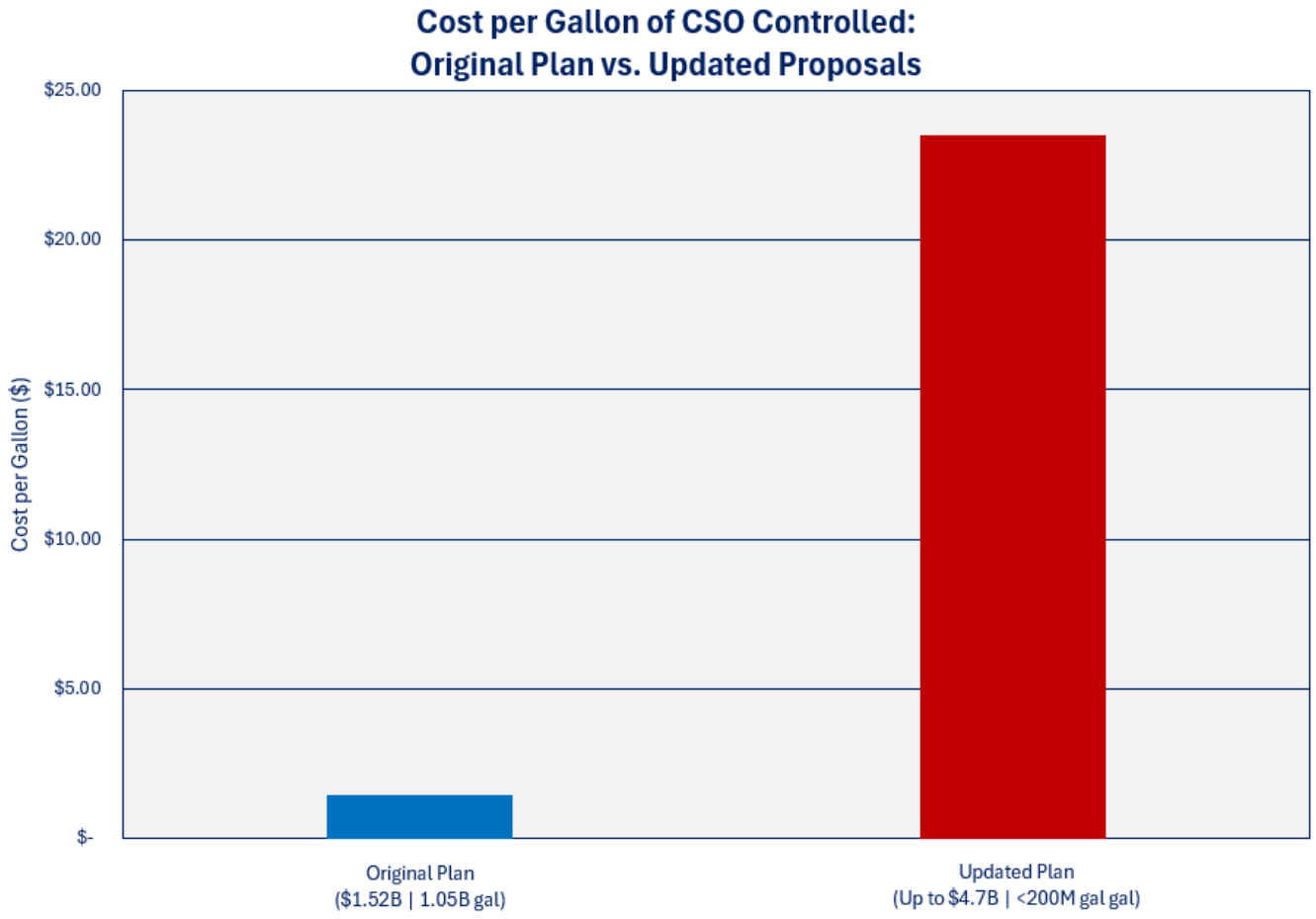
The Next Wave of Projects

MWRA, along with Cambridge and Somerville, is now evaluating a new suite of CSO control projects. These alternatives aim to eliminate the remaining CSO discharges across targeted areas of the Charles and Mystic River watersheds, including Alewife Brook— with modeling based on projected **2050 storm conditions**.

The potential capital cost? Up to $4.7 billion.

The additional overflow volume controlled? Less than 200 million gallons per year.

That brings the cost to more than $23 per gallon — nearly 16 times the cost of the original LTCP.



The value proposition also looks very different. The original LTCP delivered water quality benefits across **Boston Harbor, the Charles River, and the Mystic River**, with systemwide improvements felt across dozens of communities and millions of residents. In contrast, the proposed new projects target a much smaller set of remaining discharges in a narrower geographic footprint — serving fewer people, with higher costs, and diminishing returns.

These projects also carry enormous practical burdens. Some would take **20 to 30 years** to complete. Many would involve disruptive construction in already congested neighborhoods — tunneling through city streets, replacing major pipes, and staging infrastructure in places with little available land. And after all that time and impact, the public may still ask: will these projects truly deliver cleaner water — or just deeper costs?

A Wider Lens on Risk

Local communities aren't ignoring these threats. They're living with them. And in many cases, they're doing all they can with the tools available — updating ordinances, mapping system vulnerabilities, and filing required reports. But even the best-run city or town can only do so much when the regulatory structures are fragmented, the mandates unfunded, and the storm clouds keep getting heavier.

The threats to water quality today are complex, interconnected, and increasingly beyond the scope of CSO-specific planning. Three of the biggest challenges — **stormwater runoff**, **Sanitary Sewer Overflows (SSOs),** and **Infiltration and Inflow (I/I**) — are growing fast, yet remain largely unsupported by the kind of robust regulatory, technical, and financial frameworks that made the original LTCP so successful.

Stormwater Runoff: Regulated, But Under-Resourced

Stormwater is governed under the **Municipal Separate Storm Sewer System (MS4) General Permit**, issued by the EPA and MassDEP. These permits require municipalities to implement six minimum control measures, including mapping, public education, illicit discharge detection, and construction site runoff control. (MassDEP Stormwater Permitting Overview, EPA Small MS4 Permit)

But there are two big gaps: **no dedicated funding** and **no regional enforcement framework**. Towns are left to find their own solutions for runoff that erodes roads, floods basements, and dumps polluted water directly into local rivers — the same rivers our CSO projects are trying to protect. MS4 is a start, but it's not a solution. Not without the resources and coordination to scale.

Sanitary Sewer Overflows (SSOs): Monitored, But Without a Mitigation Path

SSOs — discharges of raw or partially treated sewage — are supposed to be rare. But across the state, they are increasingly frequent, especially during high-flow events. Massachusetts law now requires public notification within 24 hours and detailed reporting within five days. (MassDEP SSO Notification Process, DEP Compliance Fact Sheet)

But beyond the reporting requirement? **There's no parallel investment strategy. No centralized enforcement. No state or federal mechanism to help communities fix the aging systems behind these spills.** In most cases, towns do their best to respond — but without funding, planning assistance, or regulatory teeth, they're fighting a chronic public health risk with a clipboard and a hope it doesn't rain too hard next week.

Infiltration and Inflow (I/I): The Slow Drain on System Capacity

While not as visible as CSOs or SSOs, infiltration and inflow pose a long-term threat to system efficiency and resilience. In some communities, I/I accounts for more than **50% of dry-weather flow** — wasting energy, eroding treatment capacity, and contributing to overflows during storms. MWRA's **I/I Grant/Loan Program** offers valuable support, but the challenge is vast — and accelerating. (MWRA I/I Program Overview)

The Equity Tradeoff

MWRA has long supported member communities in addressing these broader risks, and the Advisory Board has consistently advocated for increasing support and flexibility in programs like the I/I loan and grant initiative. But local governments still bear the brunt of responsibility — and cost.

If the region commits to $4.7 billion in new CSO controls, much of that cost will fall on Cambridge and Somerville. And with limited fiscal capacity, these communities may have to postpone or scale back other critical investments: SSO prevention, green infrastructure, or climate-resilient stormwater management.

The result? Infrastructure may be expanded, but water quality may remain compromised. Not because we failed to act — but because we acted too narrowly.

A Smarter Standard for Progress

The Advisory Board believes in investment — but only when it delivers. That means asking not only whether a project reduces CSO discharges, but also whether it truly improves water quality in the real world we live in — a world where SSOs, I/I, and climate impacts are increasing faster than our models, budgets, or pipes can keep up.

That's why we continue to support solutions that adhere to the Advisory Board's longstanding principle: investments must be both environmentally sustainable and ratepayer equitable — a value we've articulated in one form or another since at least 1998. Today, we've simply shortened that commitment to Green and Fair.

- **Strategic** — maximizing real-world impact per dollar spent
- **Equitable** — preventing Environmental Justice communities across the system from bearing steep costs without meaningful benefit
- **Resilient** — adaptable to larger, less predictable storm events
- **Practical** — achievable within timelines that matter, and budgets that hold

Planning is essential — but planning alone doesn't solve problems. It's how we spend, where we act, and what we prioritize that will define the next chapter. This isn't just about removing the next gallon — it's about protecting the next generation.

In Conclusion

The Advisory Board supports MWRA's commitment to clean water — and to continued progress on combined sewer overflows. But we cannot support any investment without asking what it will truly deliver — and what it might prevent us from doing elsewhere.

At up to $4.7 billion, the proposed next round of CSO projects is more than a construction plan — it's a generational choice. A choice about how we spend limited public dollars, whose needs get prioritized, and what problems we decide to solve. These projects come with enormous costs, multi-decade timelines, and real impacts on communities — and they target a shrinking set of discharges that may not even be the primary driver of water quality problems in those areas.

Meanwhile, stormwater systems are failing. SSOs are rising. I/I is eroding system capacity across the region. And Environmental Justice communities — both in and outside the CSO project zones — are living with the consequences. Yet none of these challenges fall under the mandate or funding structure of the plan now being considered.

This is not a call to walk away. It's a call to step back, zoom out, and lead wisely. The next chapter of CSO planning

must build on MWRA's legacy — not by repeating past solutions, but by responding to present conditions and future risks.

Accordingly, the Advisory Board recommends that MWRA continue to evaluate the current CSO planning alternatives — but proceed only with those projects that demonstrate a clear, measurable return in water quality improvement, environmental justice benefit, and cost-effectiveness. If a project cannot meet those standards, MWRA should not move forward — no matter how long it's been studied or how visible it may be. We cannot afford to throw good dollars after bad, or prioritize gallons that are easier to measure over outcomes that actually matter.

At the same time, we urge MWRA to use its data, voice, and regional leadership to spotlight the growing threats posed by SSOs, I/I, and stormwater — and to continue supporting member communities through mitigation programs like the I/I Grant/Loan initiative. These efforts won't solve everything, but they represent the kind of smart, scalable investment that the next generation of planning should be built around — rather than committing billions to narrowly defined projects that leave the larger water quality challenges unresolved.

Because in the end, this isn't about pipes or permits — it's about protecting our communities, preserving our waters, and making sure every dollar invested by ratepayers delivers real, measurable value in return. The Advisory Board remains committed to its longstanding principle — rooted in decades of work and today summed up simply as Green and Fair. In this case, that means focusing on the projects that deliver the greatest public benefit, the clearest environmental gains, and the strongest return on investment for the people paying the bill.

Recommendation: The Advisory Board recommends that MWRA advance only CSO projects that deliver clear, measurable water quality improvements, environmental justice benefits, and strong returns on investment. At the same time, MWRA should elevate growing regional threats like SSOs, I/I, and stormwater — and support scalable solutions through programs like the I/I Grant/Loan initiative.