

Stormwater Management in NSW: A Broken System

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1.0 Introduction

For decades, the management of urban stormwater in New South Wales has been predicated on a fundamental paradox. Rainwater, a potentially valuable resource, is treated as a nuisance—a problem to be disposed of as quickly and efficiently as possible through a vast, aging, and largely unseen network of pipes and drains.¹ This traditional focus on flood mitigation, while necessary, has perpetuated a systemic failure to address the broader environmental, social, and economic dimensions of stormwater. The result is a broken system, teetering on the brink of crisis, characterized by chronic underfunding, fragmented governance, and a critical lack of strategic leadership.

This systemic dysfunction has cultivated a massive and growing infrastructure renewal backlog, estimated at over \$633 million in 2012 and undoubtedly far greater today, which threatens communities with increased flood risk and exposes precious urban waterways to relentless pollution.³ Local councils, the primary custodians of these multi-billion-dollar assets, are trapped in an unwinnable situation—delegated the immense responsibility for management but denied the financial capacity to fulfill it sustainably.¹

This paper will argue that the current framework for stormwater management in NSW is fundamentally broken. It will dissect the core elements of this failure, beginning with the fragmented and inefficient governance structure that prevents holistic, catchment-wide solutions. It will then analyze the severe and systemic funding deficiencies that guarantee a future of managed decline for these critical assets. The paper will also explore the technical and capacity deficits that hinder progress, exemplified by the industry-led effort to reform the dysfunctional approval process for essential water quality technologies. Finally, after examining the severe consequences of this broken system, it will present a new, emerging vision for reform—the Stormwater 2030 model—which offers a potential pathway from systemic failure to a sustainable and resilient future.

2.0 The Governance Quagmire: A System Without a Steward

The foundational flaw in NSW's stormwater management framework is the absence of a single, accountable steward for any given urban catchment.⁴ Instead, responsibility is fractured across a complex and often overlapping array of public and private entities, creating a governance quagmire that inherently obstructs effective, integrated management.⁵

The responsibility begins with private property owners, who are legally required to manage drainage within their own boundaries.⁶ From the property line, management of the public network is primarily the duty of local government. The state's 128 councils own and manage the vast majority of stormwater infrastructure assets, from street-level pits and pipes to larger conveyance systems.¹ This responsibility is not merely operational but strategic, requiring councils to plan for the entire asset lifecycle under the state's Integrated Planning and Reporting framework.⁸

However, council responsibility is not absolute. In Greater Sydney, the state-owned Sydney Water Corporation manages major 'trunk' drainage systems, typically defined as those servicing catchments larger than 15 or 60 hectares, depending on the area.⁹ This division creates an arbitrary and inefficient administrative boundary within a single hydrological system. A flood surge or a plume of pollution does not respect a 15-hectare catchment line, yet the governance structure forces a piecemeal response to what are fundamentally catchment-wide problems.⁴ This fragmentation is a direct impediment to the integrated water cycle management that is now considered best practice.¹²

Overseeing this operational landscape are various state government agencies that set policy and provide a loose regulatory framework, including the Department of Planning, Housing and Infrastructure and the Environment Protection Authority (EPA).¹³ While these bodies provide guidelines, they have largely devolved direct responsibility for urban catchment management to local governments without providing the necessary technical or financial support to succeed.⁴ This structure creates a profound disconnect: councils are handed the primary responsibility for service delivery but are simultaneously constrained by state-level policies that cripple their ability to fund it.³ This unfunded mandate is a defining characteristic of a broken system.

3.0 The Funding Famine: A Cycle of Decline

The fragmented governance model is cemented by a deeply flawed and inadequate funding system that has precipitated a state-wide infrastructure crisis. Local councils find it exceptionally difficult to raise a sustainable revenue stream to support stormwater management, forcing these essential assets to compete with other community services for a share of rate-pegged general revenue.³

The primary dedicated funding mechanism, the Stormwater Management Service Charge (SMSC), is structurally incapable of meeting the need. The charge, which councils can levy on ratepayers, is capped by state legislation at a nominal \$25 per residential property and is not indexed to inflation, meaning its real value is constantly eroding.¹⁵ This generates trivial amounts of revenue relative to the scale of the problem. For example, Clarence Valley Council's introduction of the charge was anticipated to raise just \$420,000 annually against an identified backlog of over \$10 million in high-priority renewal works.¹⁶ The inadequacy of the SMSC forces councils to rely on their general fund, which is itself severely constrained by the state's rate-pegging policy, a cap on annual rate increases that rarely keeps pace with the rising costs of construction and maintenance.¹⁷

The result is a massive and growing infrastructure renewal backlog. In 2012, Local Government NSW reported a state-wide stormwater drainage backlog of **\$633 million**.³ More recent data confirms the trend: Ku-ring-gai Council forecasts its total infrastructure backlog will rise to \$325 million in the next decade, with 43% of its stormwater drainage already in poor or very poor condition.¹⁸ The 2024 Auditor-General's report on local government underscores this systemic stress, finding that 46% of all councils failed to meet the infrastructure renewal benchmark.¹⁹

This funding famine means that even with sophisticated asset management plans, councils are often forced to adopt a strategy of "managed decline".²⁰ Instead of planning for sustainable service delivery, they are simply documenting the inevitable deterioration of community assets. This is not a sustainable model; it is a blueprint for future failure, unsustainably transferring the costs of renewal and replacement to future generations.³

4.0 Technical and Capacity Deficits: A System Ill-Equipped for Modern Challenges

Beyond the crises in governance and funding, the NSW stormwater system is hampered by significant deficits in technical capacity, standards, and leadership. The 2021 Stormwater NSW White Paper identified a critical shortage of skilled personnel to plan, design, and manage modern stormwater infrastructure, a problem exacerbated by a lack of state-endorsed technical guidelines and formal capacity-building programs.⁴

A clear manifestation of this systemic weakness can be seen in the management of Stormwater Quality Improvement Devices (SQIDs). These are essential pieces of infrastructure, such as gross pollutant traps and filtration systems, designed to remove contaminants from runoff before they enter waterways.²¹ Despite their importance, the process for approving new SQID technologies for use in NSW has been described by industry stakeholders as inefficient, inconsistent, ad-hoc, and costly.²¹

The existing national protocol, the Stormwater Quality Improvement Device Evaluation Protocol (SQIDEP), focuses narrowly on water quality performance and fails to address other critical lifecycle factors such as maintainability, operational costs, and sustainability.²¹ This has created significant barriers to innovation and the adoption of best-practice technologies.

In response to this clear system failure, industry body Stormwater NSW has convened the **NSW SQID Taskforce**. This collaborative initiative brings together over 30 experts, government representatives, and stakeholders to address the challenges and develop a more efficient, consistent, and robust framework for SQID assessment and implementation in NSW.²³ The Taskforce's objective is to provide recommendations for an improved approval process that considers the full lifecycle of a device, moving beyond a simple performance metric to a holistic assessment.²¹ The very existence of this taskforce, a voluntary body stepping in to fix a broken regulatory process, is a powerful indictment of the lack of state-level leadership and technical support for the sector.

5.0 The Consequences of Systemic Failure

The consequences of NSW's broken stormwater system are not abstract accounting problems; they manifest as tangible and escalating risks to the environment, economy, and community.

Environmental Degradation: Unmanaged stormwater is the primary driver of degradation in urban waterways.²⁵ Runoff from impervious surfaces like roads and roofs carries a toxic cocktail of pollutants—litter, sediment, oils, heavy metals, and chemicals—directly into creeks, rivers, and harbours.²⁷ This pollution destroys aquatic habitats, harms wildlife, and can render waterways unsafe for recreation.²⁵ In Sydney, the stormwater network is known to surcharge during large rainfall events, increasing the risk of flooding and pollution at iconic locations like Circular Quay and discharging directly into the harbour.²⁸

Economic and Social Risks: The chronic underfunding of asset renewal directly increases the risk of flooding, which can cause catastrophic damage to private property and public infrastructure.²⁵ Deferring maintenance does not eliminate costs; it merely delays and magnifies them, transforming routine repairs into expensive emergency works.³ The deterioration of the network, with some pipes in Sydney now over 100 years old, creates a growing liability and a direct threat to public safety.¹⁸ Furthermore, the degradation of waterways leads to a significant loss of public amenity, diminishing the quality of life in urban areas and impacting community wellbeing.²⁶

6.0 A Vision for Repair: The Stormwater 2030 Model

In response to this systemic crisis, a new advocacy body, **Stormwater 2030**, was formed in 2024 with the ambitious goal of forging a new path for stormwater management in NSW.³¹ Born from an industry-wide conviction that the sector's current performance is inadequate, Stormwater 2030 aims to transform the state's approach to achieve world-class beaches, harbours, and rivers.³¹

The Stormwater 2030 model represents a fundamental departure from the status quo. It acknowledges that the industry itself has been part of the problem and that the "wrong people were in the room" when discussing key issues.³² Its approach begins not with top-down pronouncements, but with listening to the community and diverse interest groups to identify problems before forming working groups to develop solutions.³³

The vision is underpinned by a call for significant new investment, proposing **\$100 million over five years** to identify and address the deep-seated deficiencies in NSW's stormwater management.³³ This funding would support the development and implementation of innovative, best-practice solutions that move beyond simple drainage to embrace integrated water management and sustainability.³³ By championing collaborative efforts and striving for a resilient environment, the Stormwater 2030 model provides a clear and necessary vision for fixing a system that has been broken for far too long.³¹

7.0 Conclusion: From Broken System to Sustainable Future

The evidence is unequivocal: stormwater management in New South Wales is a broken system. It is defined by a fractured governance framework that lacks clear accountability, a funding model that is structurally incapable of ensuring long-term sustainability, and a legacy of insufficient technical support and strategic leadership. This has resulted in a multi-billion-dollar infrastructure deficit that grows daily, placing the state's environment, economy, and communities at increasing risk from pollution and flooding.

The consequences of decades of inaction are now starkly visible in our degraded urban waterways and the growing financial distress of the local councils tasked with managing these vital assets. Continuing with the current model of "managed decline" is not a viable option; it is a conscious decision to pass an escalating liability onto future generations.

However, the emergence of industry-led initiatives like the NSW SQID Taskforce and the ambitious vision of Stormwater 2030 signal a growing consensus that the status quo is no longer acceptable. These movements provide a blueprint for change, advocating for a system that is collaborative, evidence-based, and, above all, adequately funded. Fixing this broken system requires urgent and decisive action from the NSW Government to reform the legislative and financial frameworks that have perpetuated this crisis. Only through fundamental structural change can NSW transition from a cycle of decline to a future of sustainable, resilient, and world-class stormwater management.

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