National Water Reform Inquiry
Productivity Commission
Locked Bag 2
Collins Street East
Melbourne Vic 8003

23 March 2021

National Water Reform Committee

Dear Commissioner,

Thank you for providing an opportunity to allow further comment on the draft report.

Stormwater Shepherds is an environmental not-for-profit committed to encouraging the development of national stormwater regulations, implementing a new user-pay utility charge and stormwater education. In doing so, we hope that we can firstly improve water quality by reducing plastic and urban pollution from entering our inland waterways and oceans, including microplastics and road runoff. Secondly, reduce water quantity connected to a floods surging whitewater from hard surfaces and thirdly encourage water harvesting connected with WSUDS.

Before commenting on the draft reform, we would like to note that the report consistently refers to the recent drought in Australia, yet with little reference given to the increasing number of floods, and the catastrophes in their wake, especially on the eastern seaboard. In particular, we would like to bring to the Commissioner's attention that from 2011-2020, there were at least 15 significant floods across Australia, not counting the recent 2021 flood on the East Coast. In comparison, significant floods throughout Australia's history saw 1801-1900 (6), 1901-1950 (12), 1951-2000 (25) and 2001-2010 (6).

The same increase is emulated across the planet: 1801-1900 (10), 1901-1950 (13),1951-1990 (21), 1991-2000 (18), 2001-2010 (35) and 2011-2020 (75).

The number of floods appears to double every decade from 1990, and we know stormwater from impervious, hard surfaces exacerbates the quantity of water flow.

Stormwater Shepherds recommends more consideration is given to the gravity of catastrophic floods, which result in $ billion payouts, as with the 2019 Townsville flood of $1.24 billion and the recent 2021 floods, which are estimated to be $2 billion+.

Please find following our submission:

8 Environmental Management

8.3 Waterway Oversight

Environmental water management therefore needs to be part of an integrated river or wetland management program that includes complementary habitat and water quality management (figure 8.3). This is not adequately covered in the NWI.

It is of concern that plastic pollution and road runoff from vehicles is, on the most part, unmanaged in Australia.

The pollution is conveyed by stormwater to our inland waterways and seas, with devastating consequences to aquatic life from ingestion and entanglement. Urban, or road runoff, pollution is of particular concern, especially tyre wear pollution. The microplastic polymers that shred from moving tyres is emerging as a significant threat, far more extensive than car emissions, with 95% carried by stormwater to all our waterways. Road runnoff is not managed in Australia. Refer to Attachment 1.

Unless pollutant traps in stormwater networks collect plastic and urban pollution, the pollutants will convey to our creeks, rivers, wetlands and waterways and cause unquantifiable damage to aquatic lifeforms, including humans using inland waterways for leisure, agriculture and fishing.

Correct management of stormwater networks can effectively eliminate most plastic and urban pollution and provide healthy rivers and wetlands for the spiritual, cultural and physical wellbeing of Aboriginal and Torres Strait Islander people (Chapter 9).

Revenue to cover filtration trap installation costs for road runoff can be raised through a weight tax from vehicle registration. This is discussed further on pg. 3

Note: In a *tyre and road wear particles review*, recommendations include installation of sufficient stormwater treatment systems and retrofitting of existing systems and improvement of runoff treatment systems at rural roads and highways and regular control and maintenance of drainage systems.[1]

11 Urban Water Services

11.2 Much has been achieved but the case for further action is clear

Demand for water services is also increasing, with rising populations in major cities and regional centres (chapter 2: figure 2.8).

> *Growth impacts for the water sector include obvious needs like greater water supply, but it also means more hard surfaces, increased wastewater discharges to manage within environmental protection constraints, large and costly new treatment infrastructure, and considerations of stormwater and flood management as the urban footprint expands. (WSAA, sub. 88, p. 13)*

Correctly managed stormwater will reduce flash flooding and improve water quality for the betterment of all users of inland waterways, human and animal, and assist in times of drought.

The issues from unmanaged stormwater cover a range of Implications such as *Mental health anguish, *Increased insurance premiums, *Loss of valuable property, *Dirty water, rubbish and debris clean-ups, foul odours, *Water-borne disease, *Economic impacts to tourism, recreation,

[1] Science of the Total Environment, Tyre and road wear particles – A review of generation, properties, emissions, human health risk, pg.16

fisheries, * Erosion to creeks and properties and *Tragic loss of life to human & livestock with flash flooding.

Polluted waters *Affects the health of plants and animals, specifically their reproductive systems resulting in a total ecological collapse from the loss of primary producers from food chains, *Threats to human health from ingesting contaminated seafood and swimming in polluted creeks (road runoff), *Economic impacts and *Impaired Recreational Uses - Swimming, fishing, boating.

Increased water quantity and decreased water quality will increase class actions to Governments and Local Government.

Correct management of stormwater can remove or lessen all implications - drastically reducing plastic and urban pollution and mitigating stormwater flow connected to flash flooding. However, Governments and Local Government require the authority to implement a sustainable funding mechanism that incorporates all areas of stormwater.

Potable and wastewater draw a user-pay charge; stormwater never has.

Stormwater Shepherds recommends implementing a safe, fair and accountable user-pay utility charge at a national level to raise additional revenue to cover backlog and on-going management, essential to maintaining ageing infrastructure. The new income stream will also help to fund capital works. Refer to Attachment 2.

Rising costs impact Governments and Local Government to manage existing infrastructure, causing a backlog in works amounting to $ billions across most, if not all, nationally. Adding pressures to overloaded networks and contributing to flash flooding and water quality issues.

An introduced user-pay utility charge will cover, *Backlog, *Maintenance of ageing infrastructure, *Flow mitigation - reducing flash flooding and erosion from excess water (green infrastructure *Correctly fitted pollutant systems to capture plastic and urban pollution, *Administration and *Community engagement and customer service.

Stormwater Shepherds also recommends applying a 5% weight tax to vehicle registration to fund filtration traps that will capture polluting and toxic road runoff. Vehicle registration is already in place and is a fair user-pay scheme – the more your car weighs, the higher the weight tax.

Currently, there are no filtration systems to capture polluting road runoff for road networks across the nation. All polluting road runoff enters directly into our creeks, streams, rivers, wetlands, bays, harbours and our seas during the first 15 minutes of every rain event.

An applied weight tax will cover, *Installation of filtration traps on all road networks, *Flow mitigation infrastructure, *Future maintenance of ageing infrastructure.

A stormwater user-pays utility charge and a new vehicle tax will provide Governments and Local Government the means to implement safe, fair, accountable and reasonable charges to manage infrastructure, install new infrastructure and the authority to ensure the maintenance occurs on private sites.

Supporting the new charges will require nationally standardised maintenance programs, standardised infrastructure installation, formal audits and consistent record-keeping for councils and the private sector.

Community engagement is critical in the successful implementation of both schemes.

11.3 NWI renewal is an opportunity to embed the foundations of success services.

While the NWI Pricing Principles provided guidance on pricing recycled water and stormwater as a water source, progress on including these sources in pricing frameworks has been slow. A pricing regime for stormwater management (coupled with entitlement reforms in chapter 6) would help enable stormwater to be considered as a water supply option on a basis consistent with other water sources, allowing for the lowest-cost source of fit-for-purpose water to be utilised in a particular context.[2]

To fully realise the economic benefits of using Stormwater as a resource, Governments and Local Government could encourage stormwater harvesting schemes through policy or incentive rebates. The schemes could be similar in scale to the solar rebates on a household basis or regional for a co-operative of industrial uses. Harvesting stormwater will reduce the chance of flash flooding.

11.4 Best-practice system planning should be a focus

Stormwater could be managed in ways that keep water in the landscape and contribute to urban amenity, create urban habitat, improve the health of rivers and wetlands, reduce localised flooding and/or provide alternative sources of water supply.

Stormwater Shepherds recommends water sensitive urban design is a national standard. Currently in NSW and Victoria new developments fell all trees and decimate local ecosystems, with little room to plant any trees or provide green spaces within high-density houses estates. There is no consideration for biodiversity or for the well-being of residents.

The efficiency and effectiveness of stormwater management can be greatly improved when combined with water sensitive urban design. By using gross pollutants traps, oil and sediment filtration systems, water retention pits, rain gardens, shade trees, green spaces, SMART water tanks, water quality is improved, and water quantity reduced. Further, green urban design is considered essential for the well-being of residents in towns and cities and safeguarding biodiversity. Refer to attachment 3

Summary

Stormwater is a precious resource. Over the years, rainwater has been discussed and discussed with little action. However, as Australia's cities continue to grow, so too are their hard surfaces. Australia and the world are witnessing more frequent and significant rain events, with stormwater quantity and quality issues increasing and the potential rise in class actions. Recent weather events have highlighted the need to pay more focus on mitigating stormwater flow. We saw a decade-long drought. But we experienced a doubling in significant floods, 15 in total, compared to 6 during the previous decade. Our approach can be proactive. We can prepare for drought when water is plentiful by encouraging water harvesting using SMART water tanks and large water retention traps and managing stormwater by mitigating waterflow to reduce flash flooding. We can

increase the number of pollution traps to capture gross pollutants and road runoff. By identifying the range of appropriate measures for improving stormwater quality, lessening stormwater quantity, and changing mindset, we will appreciate stormwater as a viable resource rather than view it as a headache.

Stormwater Shepherds recommends the following initiatives:

- Develop and regulate national stormwater standards
- Adopt a user-pay utility charge, as a business model, that will provide Governments and Local Government the means to correctly manage stormwater networks including backlog and capital works
- Pay for new filtration infrastructure on all road networks from vehicle registration
- Mitigate water flow through correct stormwater infrastructure
- Improve water quality by installing more gross pollutant traps and filtration systems
- Implement water harvesting through a range of initiatives
- Develop national standards for water sensitive urban design, and

Appreciate stormwater as a valuable resource

Please contact me to discuss any matters regarding stormwater.

Warmest Regards,

Mary Rayner
Director of Operations, Aust & NZ
Stormwater Shepherds
PO Box 282, Gordon, NSW 2072