Drapper Environmental Consultants Pty Ltd
12 Treetops Avenue
Springfield Lakes, QLD 4300

Your Ref:

Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
Canberra ACT 2600

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SENATE INQUIRY INTO STORMWATER RESOURCES IN AUSTRALIA

To whom it may concern,

Please find following my submission to the Senate Inquiry into Stormwater Resources in Australia.

I am available to provide evidence to the Inquiry if requested.

1. **The quantum of stormwater resource in Australia and impact and potential of optimal management practices in areas of flooding, environmental impacts, waterway management and water resource planning.**

There are many research articles and reports that have been undertaken by reputable organisations demonstrating both the benefits and constraints of stormwater from a water quality and water quantity perspective, that will no doubt be described by other submissions. The key issue that I see is that there is no ownership of stormwater, and it is not identified in any consistent legislation or regulation across the nation.

For example, it has been shown in various regions that there is sufficient stormwater, on a household scale, to delay the need to upgrade water supply infrastructure by 10 years. Toowoomba Regional Council is one such example. However, for them to implement rainwater tanks required a concerted effort, and significant additional reporting, to challenge the QLD Public Works Minister. Another example in Hobart, that could collect sufficient water to supply several industrial uses with megalitres of process water, thereby easing pressure on potable (drinking) water supplies, struggled because there was no legislative vehicle permitting Council to capture and sell this resource.

The capture and use of stormwater is a two-edged sword because it decentralises the supply, and reduces the demand (revenue stream) of government-owned and/or corporatized, privatised water corporations. Yet this protectionist position by governments has environmental costs including increased runoff into the creeks, increased erosion, decreased water quality, and flash flooding. The use of rainwater/stormwater harvesting however, reduces the size of other stormwater quality assets (Water Sensitive Urban Design) required for treatment, reduces runoff volumes, reduces creek erosion, and can assist with alleviating flash flooding.

A clear Federal policy or legislative driver requiring the capture and use of stormwater on all developments would be a good start. Enabling innovators through regulatory provisions or economic incentives to gain a return by selling the captured resource in integrated solutions would also encourage private investment in this area.

2. **The role of scientific advances in improving stormwater management outcomes and integrating these into policy at all levels of government to unlock the full suite of economic benefits.**

Stormwater science has rapidly evolved over the past decade to the point where there is strong evidence of positive impacts across multiple outcomes. It is, however, the poor cousin of potable water and wastewater treatment. Stormwater is still viewed by many local authorities as a problem that must be avoided and discharged as quickly as possible. Many don't understand the Water Sensitive Urban Design (WSUD) assets that are being installed in their jurisdiction, don't know how to maintain them effectively, and it would seem, don't have a budget to do the necessary maintenance.

Previous Cooperative Research Centres (CRCs) including Catchment Hydrology, eWater and Water Sensitive Cities have advanced the science in some areas, but others remain where they were a decade ago. The scientific understanding of bioretention systems (biofilters) has been extensively researched, but other stormwater treatment options have been ignored. Further, a coordinated, consistent investigation and characterisation of stormwater runoff quality from various landuses across Australia is still lacking. The scientific community has not settled on a definition of a gross pollutant or the definition of suspended solids.

These questions and many other require Federal Government investment in research organisations, with closer links with industry as well as government through research grants.

3. **The role of stormwater as a positive contributor to resilient and desirable communities into the future, including 'public good' and productivity outcomes**.

The introduction of mandatory rainwater tanks in southeast Queensland had a significant economic benefit through the plumbing and polyethylene tank industries in addition to relieving demand on the centralised water supplies. Rainwater harvesting systems also assist with reducing the cost (footprint) of WSUD treatment systems for developments by reducing the amount of runoff leaving each lot. The minimal cost to each house/unit/dwelling development of installing the rainwater tank has since been found to result in a premium house price (http://watersensitivecities.org.au/assessing-the-value-of-rainwater-tanks-in-perth/).

The removal of mandatory rainwater tanks in QLD resulted in a significant downturn in the above-mentioned industries. It is our view that the federal government through policy or economic incentives should seek to encourage rainwater tanks on all new dwellings/developments on a national scale. **A Federal Government fund of $200 million would provide a significant boost to encourage Stormwater harvesting schemes**.

5. **Model land use planning and building controls to maximise benefits and minimise impacts in both new and legacy situations.**

For denser urban environments, living, green roof installations are an effective and proven technology to harness rainfall, reduce heat island effects, insulate buildings, and reduce energy costs for air

conditioning. It is our view that the Federal government should be promoting through policy and incentivising these technologies into new developments, particularly in CBD re-developments. **This could be through a rebate scheme with the industry suppliers, or a "green/stormwater/blue tax credit" to businesses implementing these technologies similar to the R&D credits currently available to industry.**

6. **Funding models and incentives to support strategic planning and investment in desirable stormwater management, including local prioritisation.**

Previous funding through Federal Government grants for stormwater harvesting schemes focussed on the large-scale, large dollar value systems that minimised the overall number of grants, and thereby the quantum of benefit that could be realised by the wider community. It also effectively limited the projects to local authorities that could quickly engage design consultants and project-manage such large projects. Many smaller yet more cost-effective, and economically-sustainable projects fell below the minimum criteria.

Federal grants for stormwater harvesting schemes should encourage collaborative and cooperative schemes that share the benefit with other water users, reduce demand on potable water supplies and enable possible "lease-back" arrangements. This would provide immediate community benefit with an ongoing income stream for the Government.

However, **a policy direction should be set by the Federal government that stormwater/rainwater harvesting is something every State and local authority should be implementing**.

7. **Asset management and operations to encourage efficient investments and longevity of benefit.**

Vegetated Water Sensitive Urban Design (WSUD) assets including bioretention/biofilters and constructed wetlands are being constructed by property developers and handed over to local authorities. These have been estimated in Southeast Queensland by Healthy Waterways to have a capital value of >$500 million. In discussions with local authorities in southeast Queensland, it is clear that they have no/limited maintenance budgets for these WSUD assets, yet they are being implemented to achieve water quality targets and protect the environment. Without effective maintenance no asset will operate to its full capability, and vegetated assets are no different.

Local authorities across the east coast of Australia are, however, imposing maintenance agreements on private developments that include proprietary treatment technologies. Local authorities are not requiring maintenance agreements for vegetated assets. This creates an anti-competitive imbalance in the market that favours vegetated assets. And whilst vegetated assets aren't maintained, they fail to meet the water quality objectives. The environment is the ultimate loser.

Further, the existing proprietary technologies that are presently in public-ownership are not being effectively maintained on a regular basis. In fact, Gold Coast City Council has been filling devices with concrete because it acknowledges that there is insufficient budget available to maintain them on a regular basis. This is a false economy, in that the pollutants that would have been captured, are being released into the waterways and ending up on the beach, where they must be collected mechanically - by a different department.

In the United States, the Clean Water Act (1972) is administered by the USEPA. This Act allows the USEPA to regulate discharges of pollutants into the surface waters of the United States. Under the Clean Water Act, the USEPA licenses and enforces water quality objectives (through pollution control

programs) on the local authorities. (http://www2.epa.gov/compliance/clean-water-act-cwa-compliance-monitoring) This also ensures that implemented technologies are monitored, maintained and function to achieve their permit criteria.

The Federal government, and Environment departments should be setting clear national policies requiring the effective asset management and maintenance of both vegetated and proprietary Stormwater assets for both publicly- and privately-owned development to ensure effective environmental outcomes. Alternately, a Federal Clean Water Act similar to that implemented in the United States would also ensure environmental objectives used to require the implementation of WSUD assets are achieved through ongoing maintenance.

These policy and/or regulatory solutions will stimulate economic growth in the Stormwater maintenance industry that has struggled because they are predominantly hidden (underground) technologies that are not as visible as a pot-holed road pavement, a broken streetlight or an eroding beachfront. The environmental benefits of these policy or regulatory solutions are significant.

8. **The role of innovation in supporting desirable outcomes and transparent decision-making, including access to information and novel technologies for planning, design and implementation.**

The Stormwater industry has a range of innovative measures available for its practitioners to use to improve water quality and manage increased water volume (detention). These measures initially arose from a regulatory environment requiring the capture and removal of gross pollutants (litter) from Port Phillip Bay, Victoria and Sydney Harbour, NSW. The EcoRecycle and Stormwater Trust NSW programs funded the introduction of many innovative proprietary-designed and manufactured Stormwater treatment technologies across Australia.

This was then extended through the federal funding of the CRC for Catchment Hydrology and subsequently the eWater CRC. However, these research organisations focussed their efforts on constructed wetlands and bioretention/biofiltration systems for treating Stormwater quality and excluded proprietary technologies. The development of the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) software effectively promotes the use of natural, vegetated assets (eg. constructed wetlands and bioretention systems), with many MUSIC guideline documents now excluding or cautioning against the use of proprietary technologies. The present regulatory “push” at the local authority level is for vegetated systems, because they have an aesthetic benefit even though they may not achieve the water quality objectives that they were implemented for.

Innovative Proprietary technologies are being excluded by local authorities from the Stormwater treatment industry because there is a perception that their performance has not been sufficiently substantiated. This is despite the fact that many of the technologies have already passed rigorous testing overseas and have been accepted against international testing protocols. Other proprietary devices have operated in Australia effectively over the past decade removing tonnes of litter and sediment that would have otherwise entered waterways, harbours and beaches. This policy position by local government is stifling innovation, producing a “cookie-cutter” environment where biofiltration systems are implemented simply to get projects approved in a timely manner, even though they will never operate effectively. Local authorities are throwing the baby out with the bathwater.

To remedy this perception, Stormwater Australia has formulated a Stormwater Quality Improvement Device Evaluation Protocol (SQIDEP) that is presently in a public consultation phase with comments and feedback to be incorporated into the document over coming weeks.

What the industry needs is leadership from the Federal Government encouraging the inclusion of proprietary Stormwater treatment technologies that have complied with the Stormwater Australia SQIDEP and/or demonstrate compliance with international protocols. **Stormwater Australia also needs seed funding of ~$1 million** to implement the Australian SQIDEP process and bring it to a critical mass of engaged local authorities with ongoing sustaining membership of the process from the ground up. **Or alternately, it needs a Federal Government department to manage and implement the process from the top down**.

This SQIDEP process will result in new innovative products being brought to market, field testing (encouraging economic growth and creating more jobs), closer industry-academia ties through independent peer review, and better environmental outcomes.

Summary

Stormwater is an overlooked resource that is often viewed as a problem to be disposed of as quickly as possible. As our cities are filled with larger houses on smaller lots, stormwater quantity and quality issues are increasing. And whilst recent events indicate that for the present period, it appears there is an over-abundance of stormwater, history tells us that it will not be long before our country experiences its next drought. Now is when we should be preparing for the drought, as well as promoting resilience against floods, and identifying the range of appropriate measures for improving stormwater quality such that this resource can be used to its fullest. In my view this can be achieved through;

- **Federal government policy encouraging stormwater/rainwater harvesting at all levels of government;**
- **Incentives/grants for stormwater harvesting schemes from a Federal fund of $200 million;**
- **A Federal Clean Water Act encouraging the monitoring and enforcement of discharge quality and effective asset maintenance by local authorities and private asset owners;**
- **$1 million seed funding for the Stormwater Australia SQIDEP process**

Kind Regards,

Dr Darren Drapper,
B.Eng(Env) Hons, PhD(EnvEng), MBA, Cert IV (WHS), MIEAust, CPEng, RPEQ.
Principal
Drapper Environmental Consultants