BANKSTOWN CITY COUNCIL
PO Box 8, Bankstown NSW 1885 **PH** 02 9707 9400 **FAX** 02 9707 9495

22 April 2015

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

Dear Committee

Senate Inquiry into the Future Management of Stormwater in Australia

Bankstown Council welcomes and strongly supports this senate inquiry into "rethinking" of the way stormwater is viewed into the future. A paradigm shift in stormwater management is required to exploit the opportunities it provides, whilst managing the threats that it poses and achieving multiple community outcomes.

Council provides the following responses to the points set out under the terms of reference.

a) 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;

As a result of the impervious surfaces associated with urbanisation which prevent rainfall from soaking into the ground, significant volumes of stormwater are created which must be accommodated in drainage systems. This stormwater moves rapidly in these engineered drainage systems, causing flash flooding of urban areas and scouring out any remaining natural creeks and rivers. In terms of pollution, 90% of pollutants in stormwater come from these impervious surfaces. Yet, compounding the urban stormwater pollution problem, is that wetlands, trees and vegetation (natures Water Sensitive Urban Design features) are removed and destroyed in these urban environments.

In one of Bankstown's 21 catchments, the Rookwood Road Catchment (3.8 km^2 in size), the volumetric and pollution changes between greenfield and urbanised catchments are summarised in the below:

Parameter	Greenfield	Urban
Impervious surfaces	0%	71%
100 year event runoff	5m^3/s (estimated)	35m^3/s (modelled)
Mean annual runoff	351 ML/yr	2330 ML/yr
Gross Pollutants	0 t/year	56.2 t/year
Total Suspended Solids	negligible	51.9 t/yr
Total Phosphorous	negligible	0.9 t/yr
Total Nitrogen	negligible	7.6 t/yr

Stormwater volumes typically match or exceed consumptive water use in urbanised environments. For example in the Rookwood Road Catchment, the mean annual volume of stormwater over the catchment is 3511 ML/year, however, 845 ML/year is imported into the catchment for consumption. This means that 4 times the water required for consumption is just left to drain away.

Optimal management practices to retain, harvest and recycle this stormwater will ensure that the pressure on potable water supplies and the sewer network are minimised, realising maximum benefits of not only using this lost resource but minimising the costs associated with building new dams and upgrading sewer networks. Also due to Sydney's growing population, more housing is needed, creating more impervious surfaces and requiring the existing drainage system to be upgraded to ensure that drainage services are maintained at current levels.

b) 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;

Areas where science (and related policy) in stormwater management have advanced include:

- Intensity frequency duration (IFD) design rainfalls have been recalculated and peak discharge estimations have improved etc. (Refer to the revision of Australian Rainfall and Runoff);
- Flood estimation using two-dimensional hydraulic modelling which utilise airborne laser scanning survey to provide detailed accurate terrain survey for flood investigation;
- Water quality and treatment; and,
- Climate science, and understanding the impacts of changing rainfall patterns on stormwater and flooding (CSIRO and BOM reports)

Monash University - Water for Liveability and CRC's for Water Sensitive Cities have been instrumental in undertaking the research to create a paradigm shift in the thinking around stormwater and identifying the gaps that are preventing the economic benefits of stormwater in terms of liveability (see Point c below) being realised.

While advances in engineering e.g. flood modelling are enthusiastically embraced, the other advances are more slowly adopted. There is a need for government policy shift and guidance to encourage/legislate greater uptake of stormwater treatment and use systems and in general better management of the quality and quantity (not just flood management) of stormwater. There is the opportunity for the federal government to take the lead in stormwater policy, but all three levels of government need to be involved. Advances in climate change science also need to be supported, and firm government policy introduced (NB the NSW State Governments retraction of its sea level rise policy).

It is also recognised that while knowledge has improved, there are still gaps which will continue to require a targeted investment in developing improved understanding.

c) The role of stormwater as a positive contributor to resilient and desirable communities into the future, including 'public good' and productivity outcomes;

Current stormwater management centres on conveying stormwater as quickly as possible away from development; this management practice does not protect waterways from stormwater impacts and or embrace other potential beneficial outcomes. The role of stormwater as a positive contributor to resilient, desirable and liveable communities into the future includes retaining water:

- To reduce the peakiness of peak flood flows.
- To irrigate open spaces and streetscape vegetation for everyone to enjoy.
- To cool urban spaces and mitigate the urban heat island effect.
- To use for and to supplement water recreational areas.
- To create greener urban spaces, leading to increased amenity and wellbeing of users.
- To sustain habitats and support biodiversity.
- As viable for fit-for-purpose alternative water supplies.

The federal government needs to introduce policy which supports retaining stormwater in the catchment in recognition of the additional largely unrecognised and forgotten roles of stormwater.

d) Model frameworks to develop economic and policy incentives for stormwater management;

Over time, there has been significant cost shifting to local governments for stormwater management. This is evidenced by subsurface drainage infrastructure that is in poor condition and poor quality of water in our creeks and rivers. An example of cost shifting can be seen though floodplain management grants; in the past mitigation options attracted funding at a ratio

of $2 federal: $2 state: $ 1 local government, now this ratio is $2 state :$1 local government. Water quality mitigation options are either funded through Councils general revenues or Stormwater Management Service Charge, with or without grant funding. The Stormwater Management Service Charge (under the NSW Local Government Act) is also a set charge that doesn't increase with CPI – this should be reconsidered.

Local and State Government needs to be able to calculate the true charges of appropriate stormwater management (i.e. stormwater management that accounts for drainage, flood management, stormwater treatment infrastructure and depreciation of existing stormwater assets) and directly pass these charges back to developers, large and small, through the preparation of Drainage Schemes and the calculation of development contributions. A rigorous process and manual needs to be developed at the state level that describes how Local or State Government (Water Authorities) calculates these true charges, distributes costs equitably and passes them back to developers. National/State Policy and legislation needs to be developed as these ultimately underpin this occurring. Also needed is legislation to allow a development contribution to be collected should water quality objectives not be able to be met on site due to it not being practically feasible, so that water quality works can be constructed elsewhere in the catchment to offset the increased pollution loads and flows (ie Offset Schemes to account for these)

e) Model land use planning and building controls to maximise benefits and minimise impacts in both new and legacy situations;

National land use planning and building controls need to be defined that consider the full suite of stormwater attributes as described above, and policies need to be developed that filter down from Federal to State and Local Governments to achieve consistency and equity. Currently the NSW State Government has a priority for fast tracking development, but without any regard for the role additional roles that stormwater can fulfil. As stated before this will only result in increased need for investment in drainage, sewage and water supply infrastructure. With this in mind, green roofs, water sensitive urban design such as raingardens, swales and treatment wetlands need to be mandated from the federal government downward.

f) Funding models and incentives to support strategic planning and investment in desirable stormwater management, including local prioritisation;

Current regulations are serving as a disincentive to appropriate and responsible stormwater management. For example, the regulations associated with recent changes to the Water Industries Competitions Act have the potential to place pressure on the viability of small scale stormwater recycling scheme operated by Councils. Licence fees and ongoing intensive monitoring of the scheme proposed in the regulations could result in new and existing systems becoming too expensive and onerous for Councils to

operate. These implications of these aspects of the regulations need to be reconsidered.

g) Asset management and operations to encourage efficient investments and longevity of benefit;

There is a need for a better understanding of the value of natural stormwater assets for asset management planning to better justify soft natural creeks and rivers versus hard engineered structural options. Long term maintenance of soft engineering solutions have proven to be more cost effective then one off expensive asset replacement and should be considered as part of ongoing assets costing solutions. Mechanisms to account for the true cost / value of natural creeks and soft engineering options need to be developed. Manuals need to be developed to support this.

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

There is a need for the federal government to support and continue to support innovative research programs that monitor and investigate waterway, bay and harbour health, nutrient and sediment loads and the sources of pollutants that affect recreation and public health.

Yours faithfully

Cherie Blackburn
Catchment Management Planner