

Manningham Council (but views expressed aren't necessarily endorsed by MC)

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Responses to questions:

1.

Planning reforms are definitely needed to allow a transition to a water sensitive city.

At present many local governments are not proactively supporting WSUD as this is seen as an extra cost without a financial return, particularly in the context of rate capping. As such many opportunities to integrate WSUD into capital works programs are not being realised. Integration of WSUD into capital works needs to be a mandatory criteria, but unfortunately it looks like this will require additional planning controls to facilitate this. Great to hear the additional planning controls are now being explored that may facilitate this.

2.

Yes, additional planning controls are definitely needed covering local government capital works, industrial developments and commercial projects.

3.

Buildings can best contribute to WSUD objectives by having some onsite detention. For areas with minimal impervious area, one approach is to incorporate leaky tanks, for example with 2/3 available for storage, 1/3 available as detention. Systems need to be appropriately installed with lead diverters with insect mesh to prevent mosquito issues. For properties with larger impervious areas, an alternative to leaky tanks can be to allow some local discharge of stormwater onsite for say 80% of the one in six month event. Simple changes to the building and plumbing regulations can drive innovation in this area.

4.

In my view, the key to successful implementation is to have very simple criteria. In the past the focus has been on total N, P and SS reductions. This means that extensive modelling and design is often needed even for very small, micro systems. This is very inefficient. It would be far better if a simple, volumetric approach was adopted. This is consistent with the way most of the rest of the world looks at this issue. If designers focus on volumetric reduction, N, P and SS objectives will be met anyway. This approach is also in line with the "breaking the link" concept and "sponge cities". The building and planning requirements for all new developments, including local government capital works that don't require a planning permit, should be around a volumetric diversion to impervious areas for smaller rainfall events, such as an 80% diversion to impervious areas for a 1 in six month rainfall event. This simple criteria will be adequate to drive a whole new generation of simple, cost effective WSUD systems that will have broad benefits in terms of nutrient removal, river ecology health, flood reduction, river erosion reduction, optimisation of existing stormwater networks, offsetting ongoing effects of the continual reduction in impervious areas.

5.

Again simplicity is the key. Need to be careful to avoid implementation costs by creating a process that is complex. I would suggest that a simple volumetric requirement could be implemented right across Victoria to allow efficiencies in design, planning, technology and implementation. While there may be an argument that some areas need more protection, the expected benefits are broad, so it is very difficult to quantify spatial variability of outcomes. As such I suggest that a simple model will bring greatest benefit to Victoria as it will significantly reduce implementation cost, so will allow for more efficient roll out.

6.

Far better to have one system. Local variation is confusing for developers and professionals. Much better to focus and unification rather than diversity, but can still allow for some local diversity (such as water reuse schemes). Also best to have a system that remains fixed for a long period of time to allow efficiencies to be developed.

7.

Ideally best to have a consistent overall approach.

8.

Increasing awareness to the "breaking the link" and "local infiltration" concept, and implementation of planning controls around these.

9.

At present the link between tree root networks and increased infiltration rates is not well understood or communicated. Considerable work on this in South Australia and around the world is not being adopted. There are great opportunities to better utilise trees to help with local retention of stormwater that can be utilised. More work is needed to quantify how trees can increase infiltration rates for Victoria soils and trees. Research into the area is likely to allow the development of a new generation of tree-based WSUD systems.

10.

Local government willingness to participate due to financial limitations.

Knowledge about simple, very low cost, minimal maintenance WSUD systems.

Technologies for very low cost WSUD systems.

R&D funding for the development of civil engineering aspects of new systems in the public domain.

Funding for the development of construction templates and documentation in the public domain.

Uncertainty about the future market place for WSUD innovations.

11.

Controls to require local governments, industry and the commercial sector to implement WSUD into capital works programs.

There can also be issues with the success of implementations. Issues arise as the designer and installer don't have long term responsibility for assets. This can be difficult to resolve. One solution is to use technologies that are very simple, standardised and repeatable, allowing standard quality control processes to be developed. Simplicity is by far the best design approach, but there are obvious disincentives for designers, particularly in the consulting area, to essentially make their roles redundant by developing standard designs.

12.

There is a great opportunity to include information messaging on stormwater infrastructure, for example, pit lids to have a stormwater message. There is so much advertising space available that could be utilised at virtually no cost. This space should really be utilised. Simple messages can be included, including images of river species (platypus for example) + a simple message ("what goes in, what goes out"...) into the templates of pit lids. Enabling this should be just a matter of a bit of coordination between local government, VicRoads and suppliers. If this becomes a mandatory requirement, it will be implemented at minimal cost, and will help to educate and inspire future generations to understand and respect our water cycle.

13.

One of the issues in the past has been that WSUD has cost a lot to install and maintain. This is not going to be economically viable in the long run. Calculations for Manningham based on current systems indicate the installation cost for a full roll out would be many times the annual budget, and ongoing maintenance costs would be as much as 3-5% of annual budget. We are far better to move towards very simple, low cost systems with virtually no maintenance requirements to create a favourable transition model. Simply running stormwater onto high infiltration vegetation areas, ideally with trees, offers a potentially viable solution with the full range of water cycle benefits. New controls need to support simplicity, not encourage complexity, for a smooth transition to WSUD. Systems can be built for a few thousand, but the cost to design can often be far above this. As such we need very much to focus on simple WSUD systems with simple water management requirements. Volumetric objectives are clearly the best way to achieve this for small to moderate WSUD systems.

14.

Yes.