

DIT:Planning Reform Submissions

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To: DIT:Planning Reform Submissions; DEW:Minister Speirs; AGD:Attorney-General
Cc: John Bithell; [REDACTED] Stuart Heldon; Peter Coombes
Subject: Submission to SA Revised Planning and Design Code for Phase Three from Rainwater Harvesting Australia
Attachments: RHA SA Planning Submission Round Two final.pdf

Dear Minister for Planning, Minister for Environment and the Planning Reform Team,

Thank you for the opportunity to make a submission. Please find our submission to the revised Planning and Design Code.

Kind regards

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Submission to Department of Planning, Transport and Infrastructure 18 December 2020

Draft Planning and Design Code for South Australia

Phase 3 Urban Areas and Planning Policy

Submission by the South Australia Rainwater Harvesting Industry Group, Rainwater Harvesting Australia¹ and Professor PJ Coombes from Urban Water Cycle Solutions

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¹ All members of the rainwater harvesting industry have a commercial interest in this submission.

Introduction

Thank you for the opportunity to make a submission.

Once again, we congratulate the South Australian government on the initiative to promote stormwater management as an integral part of land use development in South Australia. A strength of this work has been that it is based on the Australian standard for stormwater management, the Australian Rainfall and Runoff Guidelines 2019, for modelling the controls in the planning scheme.

We ask that the South Australian government, including the Minister for the Environment and Water and the Minister for Planning maintain the principle of science-based targets and apply them fairly and effectively.

Water Sensitive Urban Design is not restricted to stormwater management and includes water efficiency and waterway ecology. The draft planning code does not explain how the stormwater management controls meets State Planning Policies 5 and 14 with respect to water efficiency in buildings or State Planning Policy 4 for Biodiversity. This illustrates a broader issue that stormwater continues to be considered as a separate process, rather than part of the urban water system (including ecology and biodiversity).

“This study has confirmed that traditional water planning processes remain focused on separate and siloed analysis of the key elements of the water cycle – water, wastewater and stormwater. The interactions and synergies between the elements of the water cycle are not considered... Stakeholders commonly failed to understand the need for systems analysis and the value of analysing the water cycle as a holistic system that includes wider society and environmental systems. Some members within the monopoly water industry believed the process was unnecessary, unreliable and a waste of time whilst other professionals (such as town planners and environmental managers) considered more holistic analysis was essential to the policy development process.”²

The practical considerations for regulation and compliance of rainwater harvesting for water sensitive urban design require more attention.

The Department is proposing to remove the existing NCC requirement for a rainwater tank prior to an assessment of the effectiveness of the new planning controls. It appears that the need for cost effective stormwater management and water conservation is increasing rather than declining. South Australia should not be going backwards on rainwater harvesting. We support the alternative proposal from Water Sensitive SA to retain the NCC rainwater harvesting requirement without specifying the volume, where the volume would be regulated through the planning scheme.

² Coombes, P. J., Want, S. S., & Colegate, M. J. (2012). Development of Policies for Water Cycle Reform in Greater Melbourne and Sydney. *Water and Climate - policy implementation challenges*. Canberra

Strong basis for proposed stormwater management controls

It is important to acknowledge the strong base for the planning scheme stormwater management controls. The recent BDO Econsearch³ consulting report highlighted the work Councils in South Australia have done to introduce local controls to manage these issues and the work of Water Sensitive SA in modelling and developing public awareness of these important issues. The proposed controls have been supported by an independent cost benefit analysis that increased the requirement for rainwater harvesting volumes and called for more household connections to rainwater tanks.

The proposed controls include a deemed to satisfy rainwater harvesting requirement that is practical, cost effective and supported by independent modelling based on the national standard for stormwater management (ARR 2019). The expanded stormwater sections in the urban design policy include volume reduction, peak flow, flood management and pollutant level targets. There is still room for improvement, but the Planning Department have achieved strong stormwater outcomes for the South Australian community.

The need for these stormwater management controls, both for new development and potentially to retrofit existing urban areas may be much greater than we currently realise. A recent ABC report finds that Adelaide will be severely impacted by climate change with potentially crippling implications for insurance premiums.⁴

³ BDO EconSearch. (2020). Options Analysis: Costs and Benefits of Stormwater Management Options for Minor Infill Development in the Planning and Design Code. BDO EconSearch

⁴ Ting, I., Scott, N., Palmer, A., & Slezak, M. (2020, January 3). *The Rise of Red Zones at Risk*.

Retrieved from abc.net.au: <https://www.abc.net.au/news/2019-10-23/the-suburbs-facing-rising-insurance-costs-from-climate-risk/11624108?nw=0>

Science based targets and a best practice guideline

The original modelling for the stormwater controls was based on ARR 2019 through the Insite modelling carried out by Water Sensitive SA. It is not clear if the subsequent modifications to the scheme are based on stormwater management best practice. Some proposed changes, such as the removal of the NCC requirement for a rainwater tank and the removal of the requirement for a plumbing connection to a second toilet do not appear to be based on either a standard or a cost benefit analysis.

The Department of Planning should adopt a best practice guideline for water sensitive urban design based on ARR 2019 including volume and peak flow management and water conservation and waterway ecology health measures. The recommendations of the guidelines should be expressed as measurable targets which can be verified and tested post development (this step has already been completed and incorporated into the Code). The best practice guidelines should be incorporated into the planning scheme and independently reviewed every five years.

The need for the best practice guideline is three-fold. Firstly, to ensure that the planning policy and the planning code is science based in order to be effective in achieving complex environmental objectives. Secondly, if the planning controls are based on science and important principles, they can be defended against the inevitable challenges from various stakeholders. Thirdly the guideline provides an independent test against which alternative solutions or new technologies can be assessed to ensure the objectives of the Code continue to be met.

For example, the land division policy of the draft code includes the following provisions

DTS/DPF 36.2

- b) captures and retains the difference in pre-development runoff volume (based upon a 0.35 runoff coefficient) vs post development runoff volume from the site for a 18.1% AEP 30-minute storm and*
- c) manages up to and including the 1% AEP flood event to avoid flooding of buildings.*

A best practice guideline is required that explains why these measures have been chosen, that explains the link between volume management and reductions in downstream flow, water quality contaminants and flow regimes for local waterways. The guideline needs to explain how the best practice standard has been applied, how these targets have been determined and what the expected measurable stormwater outcomes from the development will be.

Water Efficiency

Our evolving population and diversifying economy, combined with reducing rainfall and competition for traditional water supplies, requires us to continually plan for water security. We need to further reduce our reliance on the River Murray, diversify our water supplies and increase our water use efficiency.

STATE PLANNING POLICY 14: WATER SECURITY AND QUALITY

Ensure the development of climate-smart buildings that reduce our demand for water and energy and mitigate the impacts of rising temperatures by encouraging water sensitive urban design, green infrastructure, urban greening and tree canopy enhancement.

STATE PLANNING POLICY 5: CLIMATE CHANGE

Despite these State Planning policy commitments the Planning Code does not set measurable targets for building water use or water efficiency. The benefits of rainwater harvesting as a local water source for water conservation and the infrastructure and resilience benefits for the wider community are not recognised. The Planning Department has not shown that it has investigated options and investments or planned or implemented water conservation initiatives.

The only current state regulation we are aware of supporting water conservation is the NCC requirement for a 1000 litre rainwater tank which the Planning Department is proposing to remove.

The effectiveness of Sydney Water and the Department of Planning in NSW in managing water efficiency was reviewed by the Auditor General earlier this year⁵. Based on the NSW Auditor General findings the Minister for Water and the Minister for Planning in South Australia should consider if the current planning for water efficiency is serving the best interests of the public in South Australia.

The already proven NSW performance measure of a 40% savings on an average benchmark through the BASIX State Planning Policy is recommended for the South Australian Code. A range of options should be recommended for meeting the performance measure, including rainwater harvesting, water efficient appliances etc.

Rainwater harvesting is generally the most economically efficient solution for urban water uses when used in conjunction with a water utility supply and provides an efficient and reliable supply.⁶ Increased economic efficiency from rainwater harvesting can be measured in lower household water services bills, by hundreds of dollars per household each year.

⁵ New South Wales Auditor General. (2020). *Water Conservation in Greater Sydney*. Audit Office of New South Wales

⁶ Coombes P. J., Barry, M. E., Smit, M., (2018), *Systems analysis and big data reveals economic efficiency of solutions at multiple scales*, OzWater 2018, Australian Water Association, Brisbane, Australia

Australian research led by Professor PJ Coombes shows that rainwater-harvesting and water efficient appliances reduce water consumption, operating costs of water utilities and therefore water bills⁷.

There is insufficient recognition in the planning scheme of the opportunity to address building design water demand management and water efficiency in one of the hottest and driest cities in Australia and there is a missed opportunity to integrate this requirement as an urban planning objective.

⁷ Coombes, P., & Smit, M. (2020). *Alternative Water Strategy for Sydney v1*. Newcastle: Urban Water Cycle Solutions

Environmental Objectives

Minimise the loss of biodiversity, where possible, in accordance with the mitigation hierarchy:

(a) Avoidance—avoid impacts on biodiversity

(b) Minimisation—reduce the duration, intensity and/or extent of impacts

(c) Rehabilitation/restoration—improve degraded or removed ecosystems following exposure to impacts.

STATE PLANNING POLICY 4: BIODIVERSITY

As discussed in our previous submission there is a strong body of evidence that the impact of even 1% of directly connected impervious urban areas irreversibly damages waterway ecology⁸. This means that the current stormwater impact from urban areas are

- Impacting on biodiversity and should be avoided
- Impacting on biodiversity and should be minimised
- Impacting on biodiversity and those degraded systems require restoration

Declining waterway quality is likely to impact on coastal environments and particularly seagrass ecologies. This is a major issue and requires further examination for a future amendment to the planning scheme.

⁸ Rosrakesh, S., Walsh, C., Fletcher, T., Matic, V., Bos, D., & Burns, M. (2012). *Ensuring Protection of Little Stringybark Creek - Evidence for a proposed design standard for new developments*. The University of Melbourne.

[Building compliance, installation and registration for Rainwater Harvesting Systems](#)

We understand that the practice of 'tank by owner' clauses in building contracts is widespread. If the requirements for installation of rainwater harvesting are not met during construction and plumbing of the building than new building owners will be required to retrofit and install rainwater harvesting systems at significantly greater cost. Although rainwater harvesting is not complicated technology there are major cost benefits to installation at the time of construction rather than retrofitting.

Key issues the Department should address:

- The rainwater tank must be shown on the planning permit plans including the footprint, volume and dimensions.
- The rainwater tank must be installed prior to occupation of the building
- The plumbing fittings for rainwater harvesting connection to toilets, laundry or hot water system must be specified and connected to the tank prior to occupation of the building.
- There should be a clear and effective process in place for compliance and enforcement of these provisions

The requirement for stormwater management is a long term one which is likely to become increasingly important in future. Rainwater harvesting tanks are an important stormwater management asset and like all assets they need to be managed, requiring registration, monitoring and maintenance. We suggest that private stormwater assets should be registered by local government to ensure a record is maintained and the assets can be monitored in future decades.

Fairness and Equity

In 2018 the Improving Stormwater Management Advisory Committee 2018 made the following findings

Current arrangements for managing stormwater in new developments in Victoria are inadequate for meeting the Victorian Government's policy objectives of protecting the long-term health of urban waterways and bays and for maintaining the resilience and liveability of our towns and cities, particularly with future population growth and climate change.

The state's stormwater planning provisions are inconsistent and therefore inequitable. The provisions exempt many types of development from managing stormwater, including those that create the most harmful stormwater impacts.

To address these issues, the Improving Stormwater Management Advisory Committee recommends changes to the Victoria Planning Provisions (VPPs) and the state's Planning Policy Framework (PPF). As the highest priority, the committee recommends extending the range of developments required to meet the state's stormwater management requirements beyond residential subdivisions and apartments to include:

- *commercial subdivisions and developments*
- *industrial subdivisions and developments*
- *public-use developments*
- *multi-dwelling residential subdivisions and developments.*

The recommended changes to the VPPs will address inequities such as that people buying houses in Melbourne's growth areas and buying apartments are currently investing in stormwater management, but industrial and commercial developers and multi-dwelling residential developers in established suburbs are not.⁹

This is an important principle and it is important that the new Planning Code apply it. All classes of development including non-residential such as commercial and industrial and all classes of residential should equitably bear the burden of meeting urban stormwater challenges. This may already be the case but the current planning code is a very difficult instrument to interpret and there may be some classes of development which have stormwater impacts but are not subject to stormwater controls or varying levels of stormwater controls not consistent with their impact.

Our other concern about equitably applying the controls relates to the predictability of future stormwater performance. The challenges for South Australia are very real. Flooding will affect lives and properties. Waterway quality will further decline if we don't intervene. We should rely on the best available science to meet these challenges but we also need to rely on development controls to deliver the required outcomes. We need to be able to confidently predict that the development controls will deliver the required reductions in

⁹ State of Victoria. (2018). Improving Stormwater Management Advisory Committee report.

peak flow, volume and water quality and that forecasting requires that the policies are rigorously and consistently applied to all development in the urban area. Inconsistent application of policy applied to some but not all areas means that it will not be possible to predict the stormwater outcomes, putting the community and our natural environment at an increased risk.

[Value of the Rainwater Harvesting Industry to the SA Economy by Professor PJ Coombes](#)

Data was collected in 2020 from local industries and analysed by Professor PJ Coombes in order to inform this submission.

In 2020, the annual sales of rainwater harvesting products is greater than \$23 million and more than 146 people are directly employed. The rainwater industry would also indirectly employ about 875 people (plumbers, sales people, maintenance, other peripherals and services).

If we assume that the fixed value of the businesses is equivalent to the 2020 annual turnover and there is 1% growth in the rainwater businesses to 2050 (using a 4% discount rate), the present value of the SA rainwater industry in 2020, is more than \$920 million.

So, removal of requirements supporting rainwater harvesting could decrease the value of the SA economy by \$1 Billion

These estimates do not include the water resources, environmental and stormwater values supplied to you elsewhere – this estimate ONLY refers to the value of the rainwater businesses in South Australia.

It is noteworthy that about 1,000 employees (direct and indirect) and annual revenue of \$23 million is significant in the context of the South Australian economy and employment challenges. Increasing rainwater harvesting will make a positive contribution to the economy and employment in South Australia. Removing rainwater harvesting would strongly impact on the economy and employment.

These are local economic benefits – this is a contrast to other preferred centralised sourced of water that only partially contribute to the SA economy due to external businesses providing the staff and resources

Conclusion

Rainwater Harvesting provides water efficiency benefits to the household, operational and capital savings to water utilities, stormwater management benefits for flooding and local waterways and irrigation opportunities for increased green infrastructure and liveability. These are significant integrated water management benefits from a simple piece of infrastructure. Although we have a number of important modifications to the Code the Minister is commended for supporting this integrated approach to water management.

The proposed stormwater management approach in the Planning Code is supported with the following additional recommendations.

Recommendations

1. The current NCC provisions for rainwater tanks including links to the plumbing code be retained but the requirement for volume be removed and managed through the new Planning Code.
2. The Department of Planning articulate the measures that will be put in place to ensure rainwater harvesting requirements are efficiently implemented and enforced and measures put in place to capture all stormwater management planning permit requirements for future stormwater assessment.
3. The new Planning Code incorporate a best practice guideline for managing stormwater based on the Australian Rainfall and Runoff Guidelines 2019, water efficiency and the ecology of local waterways. This science-based guideline is required to demonstrate the effectiveness of the proposed stormwater management overlay controls, provide a justification if the provisions of the new code are challenged and a means of assessing alternative proposals if they are put forward.
4. The Minister for Water and the Minister for Planning jointly investigate why the new Planning Code does not consider water conservation or water efficiency despite State planning policies 5 and 14.
5. The Minister for the Environment investigate the impact of the stormwater management overlay and urban stormwater on sensitive receiving environments including waterway ecologies, coastal ecologies and seagrasses and the application of State Planning Policy 4 to the new Planning Code.
6. The requirements for rainwater harvesting connections to toilets, laundry and hot water systems be based on stormwater modelling in accordance with ARR 2019 and be reconsidered in that light.
7. The new stormwater management overlay be applied consistently to all residential, commercial and industrial land uses. Not to do so is inconsistent and inequitable as it places the burden of managing stormwater arbitrarily on some development but not those that often have the greatest stormwater impacts. This may already be the case but it has not been possible to interpret the Code to check.
8. The economic value of the rainwater harvesting industry to the SA economy be noted

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