

26 April 2021

Ms Abbie Galvin
Government Architect NSW
Department of Planning, Industry and Environment

Via online submission www.planningportal.nsw.gov.au

Explanation of Intended Effect New State Environmental Planning Policy (Design and Place)

Dear Ms Galvin

Thank you for the opportunity to comment on the Department's proposed intent for the new State Environmental Planning Policy (SEPP) for Design and Place. Sydney Water appreciates the great significance of the new SEPP to put sustainability and quality integrated design at the forefront of new development and place-making for our urban areas.

Sydney Water strongly supports the intent of the new SEPP. Overall, the proposed principles clearly align with Sydney Water's vision, ***Creating a better life with world-class services*** and our strategic outcome of thriving, liveable and sustainable cities. Our customers and communities have told us they are seeking more connected spaces, greener places, sustainable resource management, and water security.

Our detailed comments are attached in the Department's submission format. We would welcome liaison with the Department as the SEPP is being drafted, to discuss matters of detail such as the proposed application of the SEPP to new water-related infrastructure, opportunities to improve water management, and the refresh of BASIX. Sydney Water would be happy to work with the Department on a contemporary review of existing tools such as BASIX to further lift water efficiency, as well as explore potential new tools to help deliver blue-green outcomes.

Sydney Water would welcome further dialogue on the matters raised in our submission. Please contact Ms Persephone Rougellis Strategy Manager, Sustainable Cities and Communities at [REDACTED] or [REDACTED] if you would like any further information or we can provide support.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Maryanne", followed by a horizontal line.

Maryanne Graham
General Manager
Customer, Strategy and Engagement
Sydney Water

Public Exhibition for the Explanation of Intended Effect New State Environmental Planning Policy (Design and Place)

Your Name	Persephone Rougellis, Strategy Manager Sustainable Cities and Communities
Your Organisation	Sydney Water Corporation Sydney Water supplies water, wastewater and some recycled water and stormwater services to more than five million people across Greater Sydney and the Illawarra. Our role and responsibilities are broad, ranging from the health of the city and its people, to managing the environment and health of our waterways, to helping ensure overall affordability, liveability and wellbeing for our customers.
Postcode	2150
Phone	
Email	
Stakeholder group	<input type="checkbox"/> Industry <input type="checkbox"/> Council <input type="checkbox"/> Aboriginal Community <input type="checkbox"/> Community <input checked="" type="checkbox"/> State Agency
Age demographic	<input type="checkbox"/> 18-25 <input type="checkbox"/> 26-45 <input type="checkbox"/> 46-65 <input type="checkbox"/> 65+
Your feedback	We welcome your feedback on the Explanation of Intended Effect for a New Design and Place State Environmental Planning Policy. Submissions close on 28 April 2021.
How to make a formal submission	Feedback is sought on all parts of the document. Please consider if the proposal: <ul style="list-style-type: none"> • Reflects contemporary understanding and practices • Clearly articulates the intentions of the policy • Should consider other opportunities.

Explanation of intended effect (EIE)

We note the Information in this part on context, timelines and next steps.

PART 1

Introduction

Aims: Sydney Water's vision is to create a better life with world class services and therefore we strongly support the proposed aims of the SEPP. In particular:

- Starting with Country as a foundation for place-making
- Delivering healthy and prosperous places that support the wellbeing of people, community, and Country
- To protect the environment through the identification, integration and enhancement of green infrastructure
- Designing for healthy, resilient, equitable and inviting public spaces

PART 2

Proposed new State Environmental Planning Policy (Design and Place)

Principles: Sydney Water supports the proposed five principles. In regard to:

Principle 1 Design places with beauty and character: it would be also worthwhile recognising the importance of connecting to blue spaces such as rivers, creeks and beaches, where relevant

Principle 2: Design inviting public spaces: similarly, this principle should acknowledge connection to blue corridors and designing public spaces in ways which harness rainwater and stormwater water for multiple uses including cooling and irrigation

Principle 3 Develop productive and connected places: worthwhile including the opportunity for designing with water sensitive principles in mind to harness water, support greening and cooling, and improve the health of waterways

Principle 4 Design sustainable and greener places we strongly appreciate this principle brings together water, energy and material efficiency, and the mention of designing within the landscape, including hydrology, and water sensitive urban design. There is also an opportunity for this principle to highlight opportunity to reduce waste and help towards achieving a circular economy.

Principle 5: Design resilient and diverse places this principle could also advocate for the use of building colours and available materials which help to reduce heat, and/or are resilient to extreme weather conditions such as extreme heat, sea level rise and extended heavy rainfall/local flooding where appropriate.

Application: Sydney Water notes the intent that the SEPP would apply to a range of scales including precincts, significant development, and other development on urban land.

In relation to the application of the proposed SEPP under both Parts 4 and 5 of the Act, Sydney Water requests further information in relation to:

- Application of the SEPP in relation to linear infrastructure such as water, recycled water and wastewater networks usually determined under Part 5 of the *Environmental Planning and Assessment Act 1979* (the Act). At this time Sydney Water doesn't see benefit of linear infrastructure being captured by the SEPP given the majority of the network is underground and often not on land owned by Sydney Water. Accordingly, Sydney Water considers it appropriate that linear infrastructure such as water and wastewater networks be excluded from the SEPP's application.
- Sydney Water would also like to further understand the inter-relationship of the SEPP with State significant infrastructure which could include industrial-type infrastructure such as wastewater treatment plants and water filtration plants. It may be reasonable to have the SEPP applicable to site-based major projects provided there is some ability to differentiate between design outcomes for an operating industrial site within an industrial area compared with say a residential area. We would welcome further discussions in this regard.

For Part 3 of the EIE, Sydney Water's comments primarily focus on the proposed set of design and place considerations relating to:

- Water management
- Green infrastructure
- Resilience
- Emissions and resource efficiency
- BASIX targets (meets or exceeds relevant targets)
- Tree canopy

PART 3

Key components of the new State Environmental Planning Policy

3.1 Design Processes

In relation to Design Skills (section 3.1.1.) we recommend the SEPP should include engineers and other professionals with experience in water sensitive urban design for precincts and major sites

3.1.2 Place-based approach

Sydney Water supports the place-based approach to deliver successful outcomes and achieve broader public benefit.

3.1.3 Design evaluation and review

Sydney Water supports proportionate review in line with a proposal's impact as well as varying thresholds between urban and regional areas. As mentioned earlier, Sydney Water recommends consideration also be given to some ability to differentiate between design outcomes for an industrial site compared with a residential area.

3.2 Design and place considerations

3.2.2 Mandatory matters for consideration

Table 1 Proposed design and place considerations

Sydney Water considers the proposed range of matters for consideration under the SEPP appropriate and together reflect the need for holistic consideration early in the design process. During the SEPP drafting process we recommend attention also be given to the appropriate balancing of multiple considerations for different types of development, situational context, and desired amenity and environmental outcomes.

Proposed consideration 6 - Water management

Sydney Water welcomes this proposed consideration. This will assist in the early integration of water with urban design to realise multiple benefits that optimise use of 'fit for purpose' water, support quality green and open spaces, and to ensure a balance of building, development and precinct scale infrastructure.

We also commend the recognition of integrated water management and the way improved water management contributes to wider liveability outcomes for the community. Planning investigations led by Sydney Water to reimagine the role of water as part of a holistic whole-of-water cycle planning approach has confirmed the economic value of delivering cooling and greening benefits to communities. An example of this work is Sydney Water's Western Sydney Regional Master Plan available on our website at [West \(sydneywater.com.au\)](https://www.sydneywater.com.au).

However, there are important opportunities to improve water management at the individual lot and 'significant development' scales that would also benefit from a place-based design approach. Water management at the lot level as well as significant developments can reduce the requirement for large scale detention infrastructure that has high capital and maintenance costs. Sydney Water recommends that the consideration be extended to significant development, and major sites.

As noted in Sydney Water's submission to the Department's 'Draft Greener Places Design Guide' stormwater from impervious surfaces such as roofs, roads and paved areas are best managed 'at-source' and keep water in the landscape for two key reasons:

1. To reduce the volume and frequency of stormwater runoff received by waterways
2. To limit the concentration and load of pollutants and nutrients flowing to waterways

Proposed consideration 7 - Green Infrastructure

Sydney Water supports the objective to consider green infrastructure at the precinct scale and links nicely to proposed consideration for water management. As previously advised, it is important to acknowledge the role of effective water management in achieving the place objectives. Water is essential in designing, creating, and maintaining green infrastructure, enabling this important asset to grow, connect, cool and keep green. For example, this could be delivered through passively watered street trees. (See [Designing for a cool city: Guidelines for passively irrigated landscapes](#)).

Multi-purpose green infrastructure needs to be integrated in both the public and private domain, including streetscapes that compliment a water sensitive design approach. The SEPP should consider whether codified or more

flexible, performance-based methods for water and landscape outcomes are more appropriate in different types of development.

It may also be worth noting that including green infrastructure such as open space, tree canopy and other vegetation into urban developments could also deliver air quality in addition to other environmental and social benefits.

Proposed consideration 8 – Resilience

Sydney Water supports the need for consideration to current and future risks to mitigate or avoid impacts from natural hazards and especially in view of local conditions being exacerbated by a changing climate.

Proposed consideration 17 – Emissions and resource efficiency including BASIX targets

Sydney Water notes the proposed requirement that development meets or exceeds the relevant NABERS targets and BASIX targets. We support the adoption of NABERS to drive sustainability, including water management, across a broader non-residential cohort.

Consideration could also be given to setting targets and measures in terms of resource efficiency and reducing waste and/or resource circular economy.

Sydney Water regards the proposed integration of the BASIX SEPP with the new SEPP as positive. We would also encourage a review of the water component of BASIX as regular review is needed to maintain and improve water efficiencies of new buildings, tenancies and homes and ensure NSW stays at the forefront of innovation in sustainability as urban areas grow.

The water component of BASIX can be improved by:

- Reconsidering of the appropriate minimum target. There may be a call for setting higher targets, for example BASIX 60 for all properties in urban areas, or at least where recycled water is planned or available and review for multi-unit dwellings and commercial and industrial sites. Also, market trends over the past decade have demonstrated the feasibility of achieving building performance better than the current targets.
- Supporting voluntary efforts to go beyond the minimum.
- Increase ability to monitor BASIX-certified developments overtime more accurately in terms of achieving the original water target. Due to current data constraints it is difficult to determine the ongoing performance of homes against the BASIX target. It is possible BASIX performance against the benchmark could be better than recent data may suggest.
- Promote demand security and investment for cost effective investments in alternative water sources to meet water savings target

Sydney Water would welcome supporting the Department's review of BASIX, including how the existing BASIX potable water targets may be revised, and the potential alternate assessment pathways available. We can also support a review through our monitoring, data collection and experience in alternative water sources. As well as play a role in upfront engagement with customers and industry leaders to inform and advocate.

Sydney Water would also appreciate the Department's advice about the proposed mechanism in the SEPP for "all buildings being 'ready for net zero' from 2030".

BASIX as a stormwater management/ green infrastructure tool

Sydney Water would also welcome the expansion of BASIX beyond potable water and energy consumption to assess other impacts of residential development at the lot scale, to include recycled water and irrigation demand, green infrastructure considerations and stormwater management.

We note also that there is currently no mechanism within BASIX or other similar tool to assess development types outside of residential development. We would strongly support the expansion of BASIX or the application of a

similar tool such as the Parramatta River Catchment Group's proposed Blue-Green Index to assess the full range of development types.

Under the current approach, having roofs attached to a rainwater tank it is weighted favourably in terms of BASIX performance, but performance doesn't increase if all the roofscape is attached or the size of the tank increases. It is noted that the tool is sensitive to where water is being reused but does not have any sensitivity to the wider benefits provided by changes in collected roof area or tank volume. As a result, the use and value of rainwater tanks as a stormwater management tool are currently missed in a BASIX assessment.

Targets around stormwater retention rather than a singular focus on demand reduction could be an alternative to delivering a blue-green outcome. Further detail is contained with the Parramatta River Catchment Group's submission to the EIE for the new SEPP.

Proposed consideration 18 – Tree canopy

Sydney Water encourages water, stormwater and wastewater infrastructure to be taken into consideration when planning for tree canopy, and when encouraging tree planting on private properties and in new growth precincts.

Trees also provide benefits in the management of stormwater runoff.

Appropriate vegetation can also prevent erosion of riparian areas and keep excess soil and nutrients from getting into drains and creeks and impacting on water quality. Their root systems can help maintain bank stability and diverse vegetation can increase ecological and economic productivity. A modelling study funded by Sydney Water (Morrison et al. 2016) showed that there are economic benefits of improvements to urban waterways and riparian areas in Southern Sydney.

However, if trees are planted in the wrong place, their roots can find their way into wastewater pipes and cause sewage overflows, or impose loadings which can cause broken water mains. Tree root intrusion causes about 80% of all dry weather sewage overflows each year. The impact of these overflows and breaks can have financial, social and environmental consequences for our communities and the environment.

Wastewater pipes within private property are often small and close to the surface which puts them at greater risk from tree root invasion and blockage. The maintenance of these private wastewater pipes is the property owner's responsibility. Choosing the right trees and planting them far enough away and regularly maintaining wastewater pipes can help prevent blockages and costly repairs.

The NSW Streets Opening Co-ordination Council (SOCC) and Sydney Water have guidelines for trees being planted close to utility and Sydney Water infrastructure. Sydney Water also has a list of trees on our website that should not be planted above our networks due to the aggressive nature and impact the roots have on the proper operation of the infrastructure, developed based on botanical research.

4.2 Building Sustainability Index (BASIX) SEPP

PART 4

Proposed amendments to existing State Environmental Planning Policies

BASIX as a stormwater management/ green infrastructure tool

Sydney Water welcomes the expansion of BASIX beyond potable water and energy consumption to assess other impacts of residential development at the lot scale, to include recycled water and irrigation demand, green infrastructure considerations and stormwater management.

We note also that there is currently no mechanism within BASIX or other similar tool to assess development types outside of residential development. We would strongly support the expansion of BASIX or the application of a similar tool such as the Parramatta River Catchment Group's (PRCG) proposed Blue-Green Index to assess the full range of development types.

There is little detail provided in the EIE regarding proposed targets, including how the existing BASIX potable water targets will be revised, and the potential alternate assessment pathways available. Any independent merit assessment pathway must set strong targets, to ensure that interventions identified at design stage are implemented. Consideration should be given to an ongoing monitoring regime to ensure ongoing benefits are realised.

In an urban infill context, rainwater tanks are one of the only means to satisfy BASIX targets for water. The current potable water demand reduction in BASIX has led to perverse outcomes, such as the reduction of green space to minimise irrigation requirements.

Under the current approach, having roofscape attached to a rainwater tank it is weighted favourably in terms of BASIX performance, but performance doesn't increase if all the roofscape is attached or the size of the tank increases. It is noted that the tool is sensitive to where water is being reused but does not have any sensitivity to the wider benefits provided by changes in collected roof area or tank volume. As a result, the use of rainwater tanks as a stormwater management tool are currently missed in a BASIX assessment.

Targets around stormwater retention rather than a singular focus on demand reduction would be more appropriate to delivering a blue-green outcome. This can be achieved by:

- Maximising the proportion of the roof connected to the rainwater tank
- Building in a rainwater harvesting tool to quantify the expected reduction
- Set a minimum standard for runoff reduction (% of post-development flows) for different development types.
- Maximise connections to different end uses (e.g. garden, toilets, laundry, hot water)
- Maximise tank volume.
- Encourage "leaky" tanks where water trickles out to a passive irrigation/infiltration area, increasing the potential for rainwater tanks to capture runoff during rain events.
- Build this feature into an infiltration tool.

Research undertaken by Sydney Water has also shown that only two-thirds of rainwater tanks are maintained to standard following their initial installation. The failure of these systems is attributed to:

1. Poor understanding by the property owner/occupant about how the rainwater tank should operate
2. Lack of a regulatory framework requiring systems to be maintained post installation
3. Inability for councils to resource compliance monitoring.

Reviewing the SEPP and/or other legislation to ensure ongoing compliance of installed systems, supported by a targeted education program could assist in resolving these issues. This needs to be supported by robust data capture through BASIX and/ or any other tools that are developed.

Rebuilding the BASIX tool on an updated software platform, would allow further modules to be included, such as those outlined in the PRCG's [blue-green index tool](#).

We would welcome the opportunity to work with the Department on integrating the blue-green index tool and the development of potential targets and measures to support green infrastructure.

Going beyond BASIX

The proposed SEPP should ensure that the new provisions do not override local planning controls for local councils wishing to pursue a more water sensitive approach. Sydney Water is aware that some local councils in the Parramatta River catchment are seeking to develop an incentive-based scheme to achieve better sustainability outcomes. For example, the Rhodes East Precinct proposed a bonus floor space ratio for developments that exceeded the current energy and water targets.

While this incentive-based approach is suited to high density/ mixed use precincts, it is not widely applied at present and could provide an opportunity to deliver much better sustainability outcomes for larger developments. The Sydney Olympic Park Authority rainwater tank policy is also a good example of guidelines which outline more stringent provisions than required by BASIX.

Sydney Water understands that the Department is considering the potential for a new "green factor" tool, which could integrate the PRCG's recommendations for a Blue Green Index. Sydney Water would be happy to assist any work between the PRCG and the Department on the development of this tool and potential opportunity to pilot in the Parramatta River catchment.

5.2 Other environmental planning instruments impacted by the new SEPP

Sydney Water notes that the proposed SEPP will interface with multiple other SEPPs. Of particular interest to Sydney Water is proposed interfaces with:

- Infrastructure SEPP
- Exempt and Complying Development SEPP
- Sydney Region Growth Centres SEPP
- Western Sydney Aerotropolis SEPP

We would also be keen to understand interplay with Better Placed as a complementary policy to the proposed Design and Place SEPP.

While the SEPP proposes to expand the need for design and quality it is not yet clear whether other aspects covered in existing SEPPs will be retired or transferred to the new SEPP. For example, requirements for an infrastructure study. We would appreciate the Department's clarification on this matter as the SEPP is drafted.

PART 5

Relationship with other planning instruments and policies

Integration with Exempt and Complying Development Codes SEPP

The proposed SEPP must also consider how it interfaces with the Exempt and Complying Development Codes SEPP if the delivery of more green infrastructure and improved waterway health is to become a reality.

An opportunity for increased urban greening exists within the infill space, with most low-density development occurring as complying development under the Codes SEPP. This SEPP currently has little requirement for increasing trees/ green space or specifying requirements for deep soil areas.

The Greenfield Housing Code provides a potential model which could be applied to all complying development, requiring a tree to be planted in the front and rear yard of each new home approved.

Limited lot sizes and lack of deep soil zones which prevent the planting of larger trees could be addressed by requiring increased alternative green space, require the installation of rain gardens and/ or use semi permeable surfaces for driveways and other areas of hard stand.

6.1 Development under Part 4 of the Act:

Sydney Water requests that all applications covered by the SEPP be processed via the NSW Online Concurrence Referral System (OCRS) planning portal to ensure consistency of information and that Sydney Water is included in statutory referrals via a consistent route.

PART 6

Planning pathways

6.2 Development under Part 5 of the Act: As discussed earlier, Sydney Water would appreciate further information in relation to the types of water-related infrastructure the proposed SEPP is intended to apply to. Similarly, OCRS should be used for all Part 5 proposals for which the SEPP is applicable.

6.4 Transitional provisions: Thank you for the opportunity to provide feedback on the lead time required for the transitional process. Sydney Water without need to review the draft provisions to establish a clear understanding of the implications of the SEPP applicability on essential infrastructure proposals like water related infrastructure, including maintenance activities.

APPENDIX A

Proposed Amendments to the Apartment Design Guide and SEPP 65

Potential options include

- A lessons learned from apartment buildings – incorporating urban cooling elements or paint/materials
- A5 Building form – ensuring building design reduces heat absorption to enhance precinct urban cooling.
- A6 Building spacing – sufficient space and allocated permeable zones, to manage storm water better (including retention) to enhance urban topology.
- A7 Mixed use environment that support soft or high-tech industries to negate environmental pollution in urbanised environments
- Parking – new technology or parking solutions that maximise parking capacity within smaller foot prints.
- Natural ventilation – green roofs or walls
- Apartment layout – encourage sliding doors or bifolds instead of traditional doors to improve/increase internal dwelling space.
- A.2.5 – Ensuring building design supports urban precinct cooling in the region.

There is an opportunity for a additional section that could be included for ‘Precinct cooling’ – to design with the appropriate mix of green space, green building design, smart energy and water management to ensure liveable precinct micro-climate to reduce peak energy/water demand caused by urban heat and reduce ambient temperatures.

APPENDIX B

Proposed New Public Spaces and Urban Design Guide

In line with Sydney Water’s submission on the draft Greener Places Design Guide setting “water in the landscape” targets will ensure the place outcomes are achieved. We also suggest the scope for water is widened to consider “retaining and capturing stormwater for cooling, greening and place-creating outcomes”.

Sydney Water has a (draft) report that identifies stormwater performance of green infrastructure and water sensitive urban design assets, and this can inform the design of high performing, water sensitive places. We have also identified a range of water management targets required to protect or rehabilitate urban streams which we are happy to share with the Department. We would be happy to share the report with the Department if of interest.

APPENDIX C

Sustainability in Residential Buildings

Please see our earlier comments in relation to proposed matter for consideration 17 about BASIX.

We support the transfer of BASIX into the SEPP, to enable better integration of water into urban and place-based planning. We would also support the review looking at an increased BASIX target. This should consider

setting higher targets, for example BASIX 60 for all properties in urban areas, or at least where recycled water is available and review of targets for multi-unit dwellings.

A review of BASIX could also consider:

- Whether the BASIX framework could be expanded to cover broader or additional sustainability and water management objects and targets. For example providing both water supply & rainwater attenuation benefits
- How BASIX can be improved to address non-residential demands e.g. commercial and industrial sites and retrofit of existing buildings
- The value of expanding BASIX to consider other sustainability issues. For example, NABERS (National Australian Built Environment Rating System) can be used to measure a building's energy efficiency, carbon emissions, as well as the water consumed, the waste produced and compare it to similar buildings.

Additional comments

No further comments on the EIE. We would welcome the opportunity to review early drafts of the SEPP to assist the Department in matters especially in relation to application of the SEPP, review of BASIX and matters for consideration about water management, resource efficiency and green infrastructure.

Thank you for considering Sydney Water's submission.