WSROC

Advocating for the people of Western Sydney

SUBMISSION:

Draft Design and Place SEPP

NSW Department of Planning and Environment

Western Sydney Regional Organisation of Councils Ltd.

February 2022

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1. Introduction

1.1 About WSROC

The Western Sydney Regional Organisation of Councils (WSROC) is a membership organisation that represents local government in the Greater Western Sydney region.

With a reputation for considered policy analysis and bipartisan advocacy, WSROC brings a collective voice to those issues which are crucial for Greater Western Sydney's growing population.

WSROC's primary role is to represent the councils and communities of Greater Western Sydney, as well as developing resource sharing and other co-operative projects between member councils. WSROC also manages a number of projects, which are either funded jointly by its members or from external sources.

Western Sydney Regional Organisation of Councils (WSROC) welcomes the opportunity to provide a response and submission to the Draft Design and Place SEPP and related guidance documentation released by the NSW Government.

1.2 This submission

This submission is prepared on behalf of WSROC member councils. Some of our councils will make their own submission. This document should be viewed in addition, and complimentary to those responses.

When reviewing content relating to waste, resource recovery and circular economy provisions, WSROC's submission has been prepared on behalf of nine western Sydney councils participating in the regional waste strategy program. These include Blacktown, Blue Mountains, Cumberland, Fairfield, Hawkesbury, The Hills, Liverpool, Parramatta and Penrith.

1.3 Contact

WSROC would welcome an opportunity to further discuss this submission. Should there be any questions, please do not hesitate to contact WSROC CEO, Mr Charles Casuscelli on charles@wsroc.com.au or 02 9671 4333.

2. General comments

WSROC supports the NSW Government's intent to consolidate planning instruments to streamline the planning system for new development across NSW. A planning system that delivers well designed places and communities for the residents of Western Sydney whilst also supporting the delivery of housing choice, housing diversity and housing affordability is largely supported.

The development of planning policy that recognises the importance of good design for establishing healthy places that support the wellbeing of people, community and Country is also welcomed.

As such, there is generally broad support for the inclusion of the five design principles that are to be given effect within the Design and Place SEPP. WSROC is particularly pleased to see the strong focus on resilience. There is an increasing need for better urban design that not only ensures people stay safe, but can thrive in future climatic conditions.

There are several key areas of the Design and Place SEPP package that WSROC believes could be strengthened. These are outlined below.

2.1 The Cost Benefit Analysis is incomplete

The Cost Benefit Analysis (CBA) for the draft Design and Place SEPP as a whole (Deloitte Access Economics 2021) reports on interim results of the CBA, which is still underway. It provides a brief explanation of the approach to the CBA and a preliminary result for one of the options.

Three options are considered:

- Option 1: Proposed Design and Place SEPP without the flexibility provision
- Option 2: Proposed Design and Place SEPP with the flexibility provision

  > *If a design proposal which varies design criteria can meet the objectives of the design criteria in the zone in which the development is proposed and the applicant can demonstrate the departure will result in improved planning outcomes, the applicant may deviate from prescribed design criteria.*

- Option 3: Proposed Design and Place SEPP with the flexibility provision and adjustments of selected policy initiatives.

  The CBA is not clear exactly what would be adjusted. It states:

  > *Generally, those initiatives which are expected to significantly increase construction costs or impose stringent minimum standards are adjusted in this option.*

It appears that Option 1 is the version on exhibition. We cannot find reference to the 'flexibility provision', or anything resembling this, elsewhere in the consultation documents. However, Deloitte (2021) only provides a result for Option 2 (a positive BCR of 1.42). Our concern would be that the CBA will be used to justify modifying the SEPP and introducing more flexibility (less stringent requirements)

post-exhibition, or to enable trade-offs that are not truly equivalent (e.g. would developers be able to trade off deep soil and canopy cover for something else?). Deloitte (2021) states:

> *Although the proposed amendments to the Design and Place SEPP maintain that variations to development standards should meet the objectives of the development standards, there is a small reduction (5%) in the full realisation of benefits associated with provisions related to build requirements and open space requirements as a result of the flexibility provision.*

Deloitte (2021) lists a wide range of costs and benefits included in their analysis, including 'reduced urban heat island', 'increased walkability and health benefits', and 'improved social cohesion'. However, it is unclear how these elements have been quantified. There is no breakdown of the total costs and benefits, and no acknowledgement of uncertainties or unknowns in accounting for broader social costs and benefits.

Recommendations:

- That options 2 and 3 in the CBA are fully disclosed for public review prior to finalisation of the draft SEPP, including an explanation of what they involve and why they are being considered.
- WSROC expresses concern regarding the risks of introducing flexibility. This has the potential to enable trade-offs that are not truly equivalent (e.g. would developers be able to trade off deep soil and canopy cover for something else?).
- A full evaluation of Option 1 be conducted in the CBA, including information on how all costs and benefits have been accounted for, a breakdown of cost and benefit estimates, and acknowledgement of uncertainties and costs/benefits not able to be assigned a monetary value.

2.2 Ensure design principles are backed up by minimum standards and clear guidance

The proposed shift to a principles-based approach is a significant one. We recognise that allowing room for innovation and place-based planning is important. However, we equally caution that due consideration will need to be given to potential consequences to assessment processes, council resourcing, development costs, and community liveability outcomes.

It is important to ensure that the design principles are supported by sound and improved minimum standards and design criteria on which developments can build. We stress that "Guidance" will not be able to be relied on in court and so will not be able to be enforced. Failing to identify enforceable quality performance standards will result in overall loss of quality and a rapid increase in development-inequity across the city whereby lower-socioeconomic groups see poorer development outcomes due to an increased focus on feasibility.

In addition, a lack of enforceable standards can cause uncertainty for both applicants and consent authorities resulting in delays and costs for both parties.

We urge the NSW Government to ensure that the SEPP is supported by minimum standards and design criteria to ensure, safe, functional, and productive development outcomes.

The SEPP design considerations include matters that are complex and many consent authorities will need guidance as to how these can be manifested in development applications.

Concise interim guidance for assessment of different development types including objective measures should be provided while full guides are developed. These documents should be given status either in the SEPP or Regulations.

In addition, we express concern with the current wording as used in in the SEPP Clauses 24 and 30 (3)(a) which states that the whole ADG and UDG be applied "flexibly". This means that every part of the guides can be flexed, or bent, without limit. The effect of this drafting is that no part of the ADG or UDG can be applied with certainty.

Additionally, Clause (2)(a) includes the phrase "to the extent possible". What constitutes "possible" will be subject to dispute and create uncertainty; increasing potential costs for both applicants and consent authorities.

Lastly, WSROC cautions that for some elements of the built environment such as waste management, there are certain standards and requirements that need to be applied to ensure developments can function safely and sustainably and can be effectively integrated with the relevant councils' waste management service. Failing to do so will result in residents losing access to waste diversion and recycling services and result in more waste disposed at landfill.

WSROC urges the NSW Government to ensure that the SEPP is supported by minimum standards and clear guidance to ensure, safe, functional, and productive development outcomes. We further strongly recommend that the wording of SEPP is codified to ensure that flexibility is properly applied and to reduce ambiguity.

Recommendations:

- Ensure the design principles are underpinned by minimum standards.
- Ensure these minimum standards are continuously reviewed and adjusted based on latest available data and information. Options to scale-up standards and for ongoing investment in tools and pathways is recommended.
- Align ADG objectives with terms used in the SEPP and ensure appropriate design guidance is provided to inform 'alternative solutions'.
- Develop additional design guides to support the design considerations and give them status in the SEPP.
- Refine the wording of SEPP Clauses 24 and 30 and to ensure flexibility is properly applied and reduce ambiguity.

2.3 Invest in capability to deliver

WSROC commends the vision outlined in the Draft Design and Place SEPP, but also recognises that a change of this magnitude will require appropriate resourcing to ensure implementation is

appropriately supported. Training and upskilling will be required to ensure all actors have the skills and capabilities required to deliver the new SEPP.

We also highlight that overall clarity regarding the process is needed, including strong consultation with local government, assessment authorities and other stakeholders, to inform the new process. A key consideration should be assessment and compliance. We note that a design and principles-based approach will be inherently difficult to assess and monitor. Appropriate processes and safeguards should be put in place to ensure the intended effect is indeed achieved, and certain developments do not fall under the radar. As such, WSROC recommends piloting all elements of the new SEPP and associated guides to ensure there are no unintended adverse effects.

We further point to the need for appropriate funding and resources of potential additional studies, training and upskilling. Local government should be a key stakeholder in identifying what training and resourcing will be required for them to implement the SEPP, and training of the Design Review Panels.

Recommendations:

- Strong consideration be given to ensuring assessment and compliance of any development is appropriately resourced.
- The NSW Government develop a capability pathway that ensures all actors and stakeholders have the appropriate skills and knowledge to deliver the SEPP. Investment in clarity of process is critical to ensure the intended outcomes are achieved.
- The NSW Government ensures each element of the draft SEPP and accompanying guidance material is piloted across private and public stakeholders to ensure that the intended outcomes are achieved.

2.4 Exempt and complying development

WSROC notes the intent to review the Exempt and Complying Development Codes. Councils have expressed concern regarding Exempt and Complying Developments; in many cases they do not deliver the best outcomes for communities.

Ensuring the same resilience principles are prioritised for Exempt and Complying Development is critical to ensure liveable communities, particularly in view of a changing climate. While affordable and sufficient housing stock is important, speed and cost saving at the development stage should not come at the cost of healthy, quality housing that is affordable to run. We caution that sub-standard developments will ultimately shift the costs and risks (health and economic) to the occupant. This is particularly important for households on low-incomes or engaged in rental tenancies.

Recommendation:

- Ensure that Exempt and Complying Development Codes are reviewed to ensure quality of developments are safeguarded, especially in view of climate extremes. Any cost benefit analysis should consider whole of life costs for a development (e.g. energy costs) instead of focusing solely on up front development costs.

2.5 Resilience

We commend the Government's leadership in the recognition that resilience is fundamental to creating sustainable places and communities. We note and support the following statement in the Minister's Planning Principles:

> *"Resilience is a foundational characteristic of sustainable development across all 3 objectives (social, environmental, economic). Ensuring NSW is resilient and able to rebound strongly from social, environmental and economic challenges, is key to creating sustainable places and communities." [Ministers Planning Principles page 6]*

While the inclusion of resilience in the planning system is supported, WSROC is concerned regarding the lack of clarity, and guidance on how resilience is embedded in the proposed SEPP. We note a reference to the *'design for resilience' template and accompanying guidance.* We have been unable to locate this this template and assume it is not currently on exhibition.

We further highlight that a resilient planning system should enable adaptability, redundancy, modularity and subsidiarity (see PIA discussion paper 2021). Currently, adaptability for resilience over time is not reflected in this Principle and the inclusion of words that *anticipate* exposure, or that reflect the *design life* of a development or *useful life* of materials may serve to ensure resilience is long lasting and does not expire at a certain point.

Lastly, to enable resilience to truly be embedded in the planning system, clear, user-friendly guidance is required. We note that a significant number of documents have recently been published relating to resilience. These must be consolidated, and the Resilience Template exhibited for consultation.

Recommendations:

- Exhibit the mentioned Resilience Template for public consultation
- Ensure adaptability for resilience over time is reflected in the principles.

2.6 Urban and extreme heat

We are extremely pleased to see strong recognition of how the planning system can support urban cooling. Western Sydney's heat challenge is widely recognised, and Sydney's District Plans establish three key priorities related to urban heat (Greater Sydney Commission, 2018):

- Adapting to the impacts of urban and natural hazards and climate change
- Reducing carbon emissions and managing energy, water and waste efficiently
- Increasing urban tree canopy cover and delivering Green Grid connections.

As these priorities suggest, there are different ways to address heat and it needs a multi-faceted approach, with new principles embedded in planning and design to reduce heat impacts in new development.

The draft Design and Place SEPP includes some positive guidance and targets relevant to urban heat, including:

- New cool roof standards
- Improved targets for energy efficiency and thermal performance in BASIX
- Stronger targets for deep soil areas and canopy cover
- A requirement to shade glazed façades.

However, there are also important gaps and missed opportunities in the draft SEPP and its supporting guidelines. The Urban Design Guide (UDG) in particular, should be a key opportunity to set up a strong set of principles for addressing urban heat, however:

- Resilience principles are left to a guideline yet to be completed. Where resilience is mentioned, it is lacking a strong framework or clear set of guiding principles. Resilience should be a core theme underlying our whole approach to planning and design.
- Measures to address urban heat are largely limited to the 'natural systems' theme and the role of trees. It is positive to see the role of trees well supported with strong principles, clear guidance, and specific targets, however, this rigour is lacking when it comes to other measures known to reduce the impacts of urban heat e.g. street orientation, cool materials. These latter measures are briefly mentioned but not supported by strong principles, guidance, targets nor a clear approach to assessment.

While some of this could be added later (e.g. we expect the resilience guideline is still under development), they would be much better addressed if embedded from the beginning.

It is good to see that strong targets are proposed for deep soil areas and tree canopy, including specific targets applicable to streets, public open space and private lots, however there is a concerning suggestion in the Cost Benefit Analysis that two options are under investigation to allow applicants to deviate from prescribed design criteria such as the deep soil and tree provisions.

This is particularly concerning as deep soil and space for trees require integration into the most permanent components of urban morphology, lot and street network design. Once in place, retrofit to accommodate these elements is extremely challenging, costly and in some cases impossible to achieve.

Further comments follow on each part of the proposed SEPP and its supporting documents, where relevant to urban heat.

Recommendation:

- Strong support for the recognition of the need to address urban and extreme heat through urban planning.

2.7 New cool roof standards

WSROC strongly supports the inclusion of cool roof standards due to the positive outcomes that can be achieved for both individual households (thermal comfort and energy use), and communities (urban heat island mitigation), and the ease of implementation.

We understand that cool roof standards are currently under consideration (and not yet included in any draft) for the Codes SEPP and Standard Instrument LEP. This would be a positive step. Inclusion in the Codes SEPP and Standard Instrument LEP would not pick up all types of development but would capture the majority of residential development.

We note that solar absorptance is slightly different to the 'Solar Reflectance Index' proposed in WSROC's Urban Heat Planning Toolkit. While SRI accounts for both solar reflectance and thermal emittance, SA is a simpler measure. It is acknowledged that the SA measure has likely been proposed as it is already referenced in BASIX and the National Construction Code (NCC). The use of SA instead of SRI would still drive the market towards cool roofs, however it is likely to skew preferences away from certain roofing materials, which would perform better on an SRI measure than on an SA measure.

The proposed target of SA<0.7 is modest. The NCC defines a dark roof as one with SA>0.6, and there a wide range of products available with SA less than 0.6 (the SA ratings of the Colourbond range are illustrative). 0.7 has likely been proposed because BASIX already defines a dark roof as one with SA>0.7. However, it would be good to see the BASIX SA ratings brought in line with the NCC.

Recommendations:

- Cool roof standard be introduced into the Codes SEPP and Standard Instrument LEP.
- Expert and industry consultation be undertaken to identify the most appropriate measure/s to include in the standards. These should take into consideration climate zones where cool roof standards would be beneficial.
- For the definition of 'dark roofs' in BASIX to be brought in line with the NCC and for the target to be set at SA<0.6.

3. Design and Place SEPP

3.1 Waste in the Design and Place SEPP

Part 2 Design principles and design considerations	Potential Amendment	Comments
Design Consideration: *8) Resource efficiency and emissions reduction* **Section 21: The consent authority must consider whether the development—** *(a) for urban design development involving subdivision—minimises, and excludes as far as practicable, the use of on-site gas for cooking, heating and hot water, and* ***(b) is designed to minimise waste from associated demolition, construction and during the ongoing use of the development, including by the choice and reuse of building materials*** *(c) minimises greenhouse gas emissions, as part of the goal of achieving net zero emissions by 2050, including by incorporating the following—* *(i) passive design,* *(ii) energy efficiency, and* *(iii) the use of renewable energy.* *(d) uses water sensitive design and maximises water re-use.*	Split consideration 21(b) to separate considerations surrounding waste and resource recovery and circular economy. **Suggestion amendment:** ***21(b1) is designed to minimise waste from associated demolition, construction and during the ongoing use of the development. ~~including by the choice and reuse of building materials~~*** Insert 21(b2): ***Is designed to ensure design and construction contributes to the circular economy and circular economy design principles are embed into the design of the building.***	It is recommended that clause 21 of the draft DP SEPP be amended to make specific reference to and include a stand-alone design consideration for circular economy. There is a strong need for clear planning policy direction that supports the implementation of circular economy principles across all phases of the development process. The existing written form of 21(b) is lengthy and the important need to reduce waste in the development's ongoing use is lost by integrating two issues in one point. The proposed amendment would better support the delivery of: • *design principle (4): design sustainable and greener places to ensure the wellbeing of people, and the environment,* and • *design consideration (8): resource efficiency and emissions reduction.* The draft DP SEPP represents a significant opportunity to apply circular economy principles across the life cycle of new developments in ensuring new buildings are both durable and adaptable and accord with state adopted circular economy principles. A specific design consideration that recognises the importance of transitioning to a circular economy would also prioritise the potential for material reuse and support high-quality recycling systems across new developments. This approach best places new developments to accord with state-wide principles and sustainability priorities that feature

		across a number of endorsed state government policy such as: • *Greater Sydney Region Plan and supporting District Plans* • *Circular Economy Policy Statement* (February 2019) • *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027* In addition to the above, the inclusion of a stand-alone consideration for circular economy would reinforce the NSW state government commitment to transition to a circular economy over the next 20 years. This is a key commitment contained within *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027* and would support a number of policy directions and targets including: • Have an 80% average recovery rate from all waste streams by 2030 • Significantly increase the use of recycled content by governments and industry

4. Urban Design Guide

4.1 Need for measurable criteria for assessment

WSROC believes that the development of an Urban Design Guide has great potential to elevate design and development across the state. However, the current UDG criteria are often ambiguous and vague. WSROC expresses concern that this can lead adverse outcomes. We point to the learnings from the implementation of the ADG, where the greatest improvement to performance were aligned with those aspects of design that have clear and objectively measurable design criteria. The UDG criteria are often ambiguous and vague.

***Recommendation*:**

- Undertake further consultation and re-draft the Urban Design Guide (UDG) to ensure it is supported by objectively measurable criteria for assessment.

4.2 Missing resilience framework/design guidance

The diagram in Figure 4 (components of successful places) could include sustainability and resilience as one of the elements surrounding the whole structure (along with Country, place, people and culture).

Country is the subject of a separate Connecting with Country Draft Framework document and Designing with Country discussion paper (Government Architect NSW). Resilience is not supported by any equivalent framework or design guide.

Within the Urban Design Guide, the main organising structure is the '5 key urban components' in the centre of Figure 4. Designing for resilience doesn't fit neatly into any single one of these components, but the guide places it into 'urban structure' as:

> *Objective 4: Place-based risks are mitigated, and ecological values sustained to ensure resilient communities.*

The guidance in here is very general, attempting to address a wide range of hazards in a few basic principles. These over-simplify the principles of planning and design for resilience, including a few random details rather than a strong high-level framework. For example, under 4.2 'Ensure safety and resilience underpin new communities', the only advice is to provide safe zones for use in emergency management. Heat is not mentioned under Objective 4, despite several specific hazards being listed.

There is a vague indication of more guidance to come. Under 'assessment guidance', there is reference to a ''design for resilience' template and accompanying guidance'. Presumably this is still under development, however this is unclear.

We understand that resilience is a new and complex area for state planning policies, however it is not an area that can be glossed over. Resilience, by its nature, touches on all elements of urban planning and design and therefore must be central to policy development. If applicants and consent authorities

are to understand what is required of them in this new and complex space, it is essential to have a clear overarching framework, strong requirements, and detailed guidance.

Recommendations:

- Review the UDG to ensure resilience is clearly articulated as a central component of successful places
- Release the 'design for resilience' template, including strong accompanying guidance, for public consultation
- Review Objective 4 to ensure efficacy and clarity of intent. The Objective currently mixes together ecological resilience and community resilience, doing both poorly and lacking a coherent set of principles. Including references to other hazard related guidance docs (e.g. Floodplain Management, Bushfire Protection) could strengthen coherence and implementation of this objective.

4.3 Criteria for minimum provision of public space

WSROC strongly supports establishing minimum criteria for public open space. We propose for the NSW Government to collaborate with councils and other stakeholders on establishing such criteria and subsequent targets, which should include streets and land for community and public facilities but excluding regional open space, environmental land, and infrastructure. This should be accompanied by design guidance for how this should be measured , and circumstances where alternative solutions may be considered.

***Recommendation*:**

- DPE consult on the development of minimum criteria for the provision of public space with clear guidelines to aid application and assessment.

4.4 The UDG criteria for walkability is not good practice

Western Sydney has far higher rates of lifestyle-related disease than other parts of Sydney, due in part, to an urban structure that does not support physical activity and walkability. While older urban forms are slow to change, the large swathes of development occurring in Western Sydney provide a unique opportunity to deliver healthier urban structures for future residents.

The UDG must ensure walkable neighbourhoods that support improved physical activity and health outcomes for the community. Comfortable walking environments for people requires well designed street and public open space layouts but also a land use pattern and services that support daily life like small parks, schools, supermarkets, green grocers, and bus stops are within easy walking distance.

For most people, a 10-minute walk (a 20-minute round trip) is the accepted measure. Only infrequently used facilities may be within a 20-minute walk. The design criteria must distinguish between daily needs (up to a 10-minute walk) from other needs (up to 20-minutes). It also requires

that walking is safer and easier for local trips than driving, which requires local area traffic management (including speed and pedestrian priority management).

***Recommendation*:**

- Revision of walkability criteria be reviewed and improved to ensure walking is an easy and viable alternative.

4.5 Deep soil and canopy targets

WSROC is pleased to see that the draft Urban Design Guide (UDG) includes deep soil and tree canopy targets. We note that targets vary for different land use types and site areas, and there are separate targets for private lots, streetscapes and public open space. WSROC deems these targets reasonably well considered and thus supports their inclusion.

However, we note that there is minimal guidance provided in either the ADG or UDG on estimation of mature tree canopy spread. There is a risk that poor species selection, poor installation, and poor establishment could all contribute to canopy cover outcomes that are much lower than estimates made at the design stage.

***Recommendations*:**

- The proposed deep soil and tree canopy targets be implemented
- Provision of improved guidance on tree selection and a more rigorous methodology to estimate future canopy cover be developed to support these targets.

4.6 Glazed facades

Glazed facades can have detrimental impact on urban heat, reflecting and radiating heat onto pedestrian areas. We note that glazed façades are more common on commercial buildings than apartments, however the only requirement in the UDG is a high-level principle to:

> *Avoid materials and façade treatments that result in unacceptable levels of glare or other negative effects.*

We recommend that UDG shading requirements be brought in line with the ADG to ensure reductions in reflected heat from all types of buildings in CBDs.

Recommendations:

- Implement the shading and glare control requirement for apartments as outlined in ADG
- Develop similar requirements, which requires shading of all glazed façades, to be included in the UDG.

4.7 Gaps in addressing urban heat

The UDG offers broader opportunities, beyond the ADG, to address urban heat in a greater range of development types and also in the public domain. However, the principles of resilience and strategies to mitigate the impacts of urban heat are buried in the detail of the UDG and do not come across clearly.

The UDG includes some good design guidance, however far more focus is given to urban canopy than other, equally important, measures for UHI mitigation. This is reflected in the placement of urban heat measures under 'natural systems', leaving several principles somewhat out of place. For example, street orientation to catch prevailing breezes is mentioned under Objective 9 instead of fitting into the urban structure section. There is a reference to low albedo and light-coloured materials under Objective 17, where it is disconnected from other urban heat principles.

Among the high-level principles for natural systems, the UDG does include some good design guidance, including the principles listed in Figure 1.

Objectives	Design principles
OBJECTIVE 9: Landscape features and microclimates enhance human health and biodiversity	9.1 Use green infrastructure to improve human health and biodiversity 9.2 Use nature to provide delight
OBJECTIVE 10 Tree canopy supports sustainable, liveable and cool neighbourhoods	10.1 Enhance urban tree canopy 10.2 Support urban tree canopy with deep soil 10.3 Provide an interconnected soil network 10.4 Place trees to allow for maximum canopy growth 10.5 Ensure a diversity of street types enable tree planting
OBJECTIVE 11 Water is retained and water quality improved in urban places	11.1 Retain water in the landscape and contribute to urban cooling 11.2 Reduce water consumption, reduce stormwater run-off and improve water quality

Figure1. Excerpt from draft Design and Place SEPP.

Tree canopy has been given greater emphasis and greater weight than all other urban heat objectives. Objective 10 is supported by clear and specific requirements for deep soil and canopy cover in different development types. The other objectives are only weakly supported by very general design guidance. For example, under Objective 9, the following principles are listed:

- Provide trees and landscaping in public spaces as early as possible to establish long-term amenity
- Optimise local breezes and urban cooling through green infrastructure placement and street orientation to catch prevailing breezes
- Ensure landscape features are appropriate for the scale, location and use of the area
- Integrate urban greening, such as green roofs or green facades, to support urban ecology and biodiversity, reduce stormwater run-off, reduce urban heat and increase amenity.

Under Objective 11.1, the following principles are listed:

- Retain as much water in the landscape as possible
- Preference natural methods for stormwater control, integrating passive landscape elements and water-sensitive urban design
- Use water-sensitive urban design elements to support green infrastructure such as wetlands, parks, community gardens, tree canopy, corridors and bioswales to provide habitat and ecosystem services while building resilience and fostering urban cooling
- Integrate water-sensitive urban design measures such as reed beds and urban swales along green infrastructure corridors within streets and public open spaces such as parks and streets
- Support greening and reduction of urban heat by providing tree canopy in accordance with Objective 10.

The above principles could be much better supported with more specific guidance and quantitative targets; providing a much stronger basis for assessment. The assessment guidance under Objectives 9 and 11 is extremely vague – asking proponents to 'demonstrate [that] adequate amenity and human comfort can be achieved', to 'mitigate against negative sensory experiences', and to 'contribute to reducing the urban heat-island effect', but providing no information on how a satisfactory outcome would be measured.

There is clearly a need for a better approach to assessing these objectives, and the Cool Suburbs Tool and Urban Heat Planning Toolkit have a potential role to play here. It would be good to see some commitment from DPIE to developing these assessment tools further, but even before such tools are ready to be adopted formally as part of the assessment process, DPIE could adapt their approach to quantitative targets for assessing urban heat mitigation such as:

- Requirements for total pervious and/or total landscaped area
- Requirements for shade (e.g. a minimum % shade cover) in high-activity public spaces
- Requirements for irrigation (e.g. a minimum % irrigated area) in certain situations (both private common areas and high-activity public spaces)
- A quantitative target for the amount of water to be retained in the landscape (a % reduction in mean annual runoff could be a simple measure that aligns well with other quantitative WSUD objectives).

Recommendations:

- WSROC generally supports the high-level principles in the UDG, however we note that some of the urban heat principles get lost in the way the document is structured
- Implement the targets set for deep soil area and tree canopy as outlined
- Establish quantitative targets for green cover, shade and water retention in the landscape to ensure that trees are not the only measure reliably included in new development to address urban heat
- Develop clear design principles on orientation to minimise the impacts of urban heat. This should include guidance on orienting streets, buildings and open space, to maximise summer

shade where it will have the greatest benefit and to make the most of prevailing breezes. Simple drawings (like those used throughout the Urban Design Guide) would help illustrate each principle

- There is an urgent need for new assessment tools and methods. We seek support from the NSW Government to develop these tools, even if it must be a future commitment beyond the 2022 version of the Design and Place SEPP. We particularly seek collaboration with the Government to further develop the Cool Suburbs Tool, which has the potential to be used as comprehensive guidance and assessment to support the urban heat objectives outlined in the UDG.

5. Apartment Design Guide

5.1 Clarify 'alternative solutions'

For the ADG to have clear meaning and strength, a clear line must be able to be drawn from a principle straight through to an objective and its related design criteria and design guidance. This will ensure that the meaning, verification, and assessment of objectives is clear and not overly onerous.

While WSROC supports a framework that allows reasonable 'alternative solutions', we stress that the ADG must provide design guidance that reasonably and comprehensively outlines how alternative solutions should be considered in relation to each design criteria separately.

Recommendation

- Ensure appropriate design guidance is provided to inform 'alternative solutions'.

5.2 Support for deep soil and tree canopy targets

WSROC strongly supports the improved, clear targets that have been developed for deep soil and tree canopy in the ADG. The challenge of delivering canopy under the current planning system is significant when trees are competing with infrastructure (footpaths, energy, water, parking) and land prices for space and funding.

Strong targets and clear guidelines are essential for ensuring Greater Sydney meets the Greening our Cities Premier's Priority and delivers positive outcomes in addressing urban heat, drawing down emissions, and deliver pleasing, comfortable places that communities can enjoy.

WSROC notes the proposed changes to the Apartment Design Guide (ADG) include:

- Modest increases to deep soil requirements:
    - For sites <1500 m2: 10% site area, minimum 3 m wide (DC)
    - For sites 1500 m2 +: 15% site area, minimum 3 m wide with 6 m portion (DC)

  While we recognise these targets are an improvement on the 2015 ADG, we note that these deep soil targets are lower than those proposed in the EIE.
- New targets for tree canopy cover:
    - For sites <1500 m2: 15% minimum tree canopy target (DC)
    - For sites 1500 m2 +: 20% minimum tree canopy target (DC)

While WSROC supports the improved deep soil and tree canopy targets, we seek clarification from the NSW Government as to why there has been a step down from the deep soil targets proposed in the EIE for apartments.

Further, WSROC is concerned that there is minimal guidance provided in either the ADG or UDG on estimation of mature tree canopy spread. There is a risk that poor species selection, poor installation, and poor establishment could all contribute to canopy cover outcomes that are much lower than estimates made at the design stage. As such further practical guidance on these elements is suggested.

We recommend consulting with stakeholders involved in tree delivery including councils and universities (Which Plant Where program) for guidance.

Recommendations:

- Implement improved deep soil and tree canopy targets
- Explain why there has been a step down from the deep soil targets proposed in the EIE for apartments
- Develop improved guidance on tree selection and a more rigorous methodology to estimate future canopy cover.

5.3 New shading and glare control requirement for apartment buildings

WSROC supports the introduced requirement for glazing greater than 30 per cent of the wall to have external shading to block 30 per cent of summer sun. High performance glazing is not considered a substitute for shade. This requirement is supported with technical information on how to demonstrate good solar shading.

We note that the proposed approach is simpler than for example that taken by the City of Parramatta in their CBD Development Control Plan (DCP), however we acknowledge it follows similar principles. The emphasis on shade is a positive – as we know shade is the most effective measure to reduce heat reflected from façades into the public domain.

Recommendations:

- Implement the shading and glare control requirement for apartments
- Review similar requirements to require shading of all glazed façades in the UDG.

5.4 Rainwater tank requirements for apartment buildings

In the updated draft ADG, there is a requirement for rainwater tanks to be installed. A minimum size is specified and connections to toilets and washing machines are required.

However, there is no requirement for rainwater to be connected to irrigation or other outdoor uses, where increased water use could assist with mitigating the impacts of urban heat.

The sizing requirement for rainwater tanks is strange and unclear. Rainwater tanks should be sized based on many years of actual rainfall data (not design storm events) to account for seasonal and

longer-term variability in rainfall. As they are constantly filling and emptying, they should be sized using a daily water balance model, to supply a proportion of total demand. To require full use of the water from a single rain event is absurd. For comparison, Sydney Olympic Park Authority sets a much clearer requirement for rainwater tanks in apartment buildings:

> *A minimum of 0.25 kL rainwater storage is to be supplied per dwelling and an additional 1 kL of rainwater storage is to be supplied per 100m2 of non-residential net floor area.* (SOPA 2016)

Recommendations:

- Implement the requirement to provide rainwater tanks in apartment buildings
- Require rainwater be connected to outdoor non-potable uses including irrigation systems
- Clarify rationale behind the strange sizing requirement for rainwater tanks.

5.5 Waste is an essential service

Waste and recycling is an essential serviced provided by local councils to every household. The potential impact of waste planning and service delivery on the safety, health, amenity and well-being of the community cannot be underestimated. For the best environmental and social outcomes waste management needs to be considered early on in the design process.

Unfortunately, waste is often overlooked and undervalued in the design and planning stage for new developments, resulting in poor and costly outcomes for future residents as well as perpetual impacts on the built environment from the ongoing service requirements. Failing to provide adequate design guidance for waste and recycling services, particularly in apartment developments has important implications on how the development interacts between the crossover of the private and public domain.

When waste services are not considered appropriately, efficient servicing cannot occur and impedes on the ability to provide green, attractive, and safe street networks for the community. Current developments are also failing to incorporate well designed waste management facilities that are responsive to the waste management needs of the occupants, such as bin rooms that promote waste stream separation. This has significant impact on the resource recovery rates of the development and the ability of the NSW Government to deliver on the Waste and Sustainable Materials Strategy 2022-2027 and Net Zero Plan Stage 1 2020-2030.

To improve on the proposed waste and resource recovery apartment design guidance and objectives, we propose the following changes to the revised Apartment Design Guide, determined by a working group of councils in February 2022.

Part 1 Designing for the site		
1.3 Site access and address	**Potential Amendment**	**Comments**
Minimise conflicts between pedestrians, vehicle access and movement routes adjoining the site.	**Potential amendment:** Minimise conflicts between pedestrians, vehicle access, **service vehicles (such as waste collection)** and movement routes adjoining the site	It is agreed that well-designed building entries also enable efficient servicing of the development and delivery of goods to residents. Minimising conflict and maintaining safety of residents, waste collection staff and pedestrians is also vital and should form part of the considerations in early development design. The proposed amendments reflect the need to include specific reference to ensuring that new developments have waste infrastructure and waste servicing requirements integrated into the overall design of the development. For larger apartment buildings this will require a heavy rigid collection vehicle accessing the site and nominated collection point which is best considered early in the design process.
Provide clear sightlines where vehicles cross pedestrian pathways.	**Ensure the safety of all users including waste collection staff and** provide clear sightlines where vehicles cross pedestrian pathways	
1.4 Relationship to the street	**Potential Amendment**	**Comments**
Reduce the visual impact of utilities and building services on public space by locating them in basement car parks wherever possible, including substations, pump rooms, water tanks and waste storage areas.	**Potential amendment:** Reduce the visual impact of utilities and building services on public space by locating them in basement car parks wherever possible, including substations, pump rooms, water tanks **and waste storage and waste collection areas. This also includes integrating waste collection vehicle access cohesively with the development.**	The location of waste infrastructure within the development footprint and basement is generally supported. However there needs to be an emphasis of ensuring new developments are integrated with Councils standard waste service and that this may include on-site waste collection by a heavy rigid vehicle. There should be a recognition that it is essential that local councils waste service requirements for site servicing and waste collection is understood early in the design process.
1.6 Parking	**Potential Amendment**	**Comments**
Balance the visual impact of vehicle entries so they are clearly visible but also recessive to the	**Potential amendment:** Balance the visual impact of vehicle entries so they are clearly visible but	It should be reflected within the ADG that waste collection vehicles require specific height clearances for movement, circulation and operation to ensure that waste collection safely and efficiently takes place.

overall building form and streetscape.	also recessive to the overall building form and streetscape **without limiting the ability to safely and efficiently service (such as waste collection) and access the site.**	This factor needs to be considered in the overall design and site layout to minimise impacts on the built form and streetscape.
Consider deep soil zones, stormwater management and the retention of trees during initial design stages, as these can affect the size and shape of a car park footprint.	**Potential amendment:** Consider deep soil zones, stormwater management, the retention of trees during and **servicing requirements (such as waste)** for the development initial design stages, as these can affect the size and shape of a car park footprint **and basement design (including height clearances)**	It is our experience that early design and consideration of waste management systems for new developments result in positive outcomes for the community, built and natural environments. It is accepted as better practice in waste management systems for medium and high-density developments for the waste collection vehicle to enter the site to collect waste and service the development. This can be from a nominated collection point within the building footprint or within the basement car parking area where waste rooms are located. It is therefore essential that upfront planning for vehicle access and manoeuvring reflect the need to consider whether the development must be designed to facilitate on-site waste collection vehicle collection. The common standard waste collection vehicle for high density developments is a heavy rigid vehicle. Failure to consider safe and efficient access, egress and manoeuvring at the early design and planning stage of developments can have significant consequences for the development. Best outcomes for the site and the development are achieved when considerations of waste collection vehicle access requirements are considered and designed upfront in the process. It is recommended that the ADG be amended to reflect considerations of waste servicing requirements so that it can be integrated into the development early on in the design process.
Minimise the width and number of vehicle access points, ramp length and visual impact.	**Potential amendment:** Minimise the width and number of vehicle access points, ramp length and visual impact **without compromising**	As above.

	the servicing needs of the development.	

Part 3 Environmental Consideration		
3.3 Waste	**Potential Amendment**	**Comments**
Objective 3.3.1 Minimise waste storage impacts on the streetscape, building entries and amenity of residents	**Replace objective 3.3.1:** ~~Minimise waste storage impacts on the streetscape, building entries and amenity of residents~~ **Insert revised objective:** **Incorporate well-designed and innovative waste and resource recovery systems that minimise impact on the streetscape, public domain, building presentation areas and amenity of occupants.**	The incorporation of good design solutions for waste and resource recovery systems where they are integrated holistically within the development will not only result in improving on-going waste management practices for the development but will also result in improvements to the overall design quality and environmental performance. Waste and resource recovery systems are essential elements of a development yet are often undervalued or considered too late in the design and development process. Waste and resource recovery systems are often retrospectively applied and designed to fit in around other development and site considerations and constraints. This results in poor outcomes for residents and the community in regard to amenity, reduced resource recovery and costly outcomes to local councils that burden the community for the life of the development. There is opportunity for the revised ADG to recognise the importance of integrating waste and resource recovery systems holistically within developments to secure sustainability planning priorities and State-wide resource recovery targets. It is proposed to revise objective 3.3.1 to broaden its application. The current focus on "waste storage" does not consider the additional components of waste management and resource recovery systems that are key to delivering residential apartment buildings that deliver improved design quality and sound planning and waste management outcomes. It is recommended that this objective be broadened to refer to waste and resource recovery systems to better reflect and integrate all aspects of required on-site waste management infrastructure for residential apartment buildings. This broadens the focus of waste and resource recovery beyond just waste storage areas for residential apartment buildings and through the proposed amendment would now include

		consideration of waste and recycling infrastructure such as bin presentation areas, collection points and any interim storage areas for all waste streams. Poorly planned and designed waste and recycling systems can have significant amenity impacts on future occupants but also broader community such as neighbouring sites and pedestrians in terms of visual impacts, noise, traffic and safety as well as odours, in addition to the obvious environmental impacts from wind blown litter and illegal dumping.
Objective 3.3.2 Minimise occupants' waste to landfill by providing safe and convenient onsite organic and inorganic waste and recycling facilities.	**Proposed amendment:** Minimise occupants' waste to landfill by providing **waste and resource recovery facilities that promote waste stream separation including** safe and convenient onsite organic and inorganic waste and recycling facilities.	It is recommended a minor change be made to objective 3.3.2 to include the importance of designing waste and resource recovery facilities that support waste stream separation. The proposed expansion of Objective 3.3.2 would require new developments to consider and demonstrate how the efficient waste separation of general waste, recycling and organics as well as problem waste occurs on site. The reference to ensuring safe and convenient access to these facilities is retained and supported.
New objective: Objective 3.3.3	**New objective proposed:** **Developments are to ensure the quality design of waste management collection services are integrated with and are a cohesive part of any new development.**	It is recommended that a specific objective be included that prioritises the consideration of waste collection as part of the environmental considerations for future residential apartment buildings. The proposed amendment ensures local councils waste collection service is considered early on in the design phase of new developments and are integrated holistically within the development akin to considerations of car parking and landscaping. Considering the requirements of local councils waste collection service is vital in ensuring new developments deliver waste collection services that are safe, efficient, cost-effective and do not impact on amenity. There is a real opportunity for the ADG to establish the importance of good design of waste management systems that integrates the consideration of waste collection early on in the development and design process.

Design Guidance: Waste Collection		
Encourage waste separation at the source, ideally in the kitchen, by providing a dedicated waste storage area within each apartment to accommodate 2 days' worth of waste, recycling and organics.		No change
Integrate waste management infrastructure to facilitate separation of waste, recycling and organics at the point of disposal – for large buildings, on each residential level.		No change, however clarification is sought on what is considered a large building.
Prepare an operational waste management plan for residents (and other occupants in mixed-use developments) addressing waste collection, separation and storage, including locations of collection points, bin cart routes and equipment such as chutes.	**Proposed amendment:** Prepare an operational waste management plan ~~for residents (and other occupants in mixed-use developments)~~ addressing: • **Expected waste generated from the development and how the development will manage waste generated on site. This is to include identifying all allocated waste bins.**	The proposed amendment expands the considerations and inclusions for the preparation and submission of a waste management plan for new residential apartment buildings. The waste management plan is a valuable tool in communicating and demonstrating how the consideration of waste and resource recovery has been integrated cohesively within the development and supports the delivery of the local council waste service.

	• **Waste separation and storage, including locations of collection points, bin cart routes and equipment such as chutes.** • **How waste will be collected and managed for the development. This includes responsibility for cleaning, transfer of bins between storage and collection points and general maintenance of waste management facilities.**	
For safety, limit direct resident access to any areas that house chute systems and compactors.	**Proposed amendment:** ~~For safety, limit direct resident access to any areas that house chute systems and compactors.~~ **Single or dual waste chute systems are encouraged in high density residential apartments and are designed to include:** • **Single-chute system for waste and a service room on each residential floor containing the chute inlet and enough space for one mobile garbage bin each for recyclables and organics.**	The proposed amendment supports the design and inclusion of waste chute systems within larger residential apartment buildings. This approach accords with the EPA Better Practice Guide that recognises that waste chutes are the most effective method for waste collection. Chute system areas and waste service rooms on each residential floor need to be large enough to ensure a resident can move in the space in addition to the space required for bins and chute inlets.

	• **Dual chute system for waste and recycling with a service room on each level with enough space for a mobile bin for organics.** • **Restricted access for residents to waste chute discharge rooms and compactors.**	
Integrate all waste management facilities and collection infrastructure within the built form of the development to improve amenity for residents and the neighbourhood.		No change.
New design guidance	**Proposed new design guidance:** **Integrate development design with local council waste collection service. For some developments this may include:** • **an on-site waste collection service, and** • **on-site loading, manoeuvring and access by Councils Standard Heavy Rigid Collection Vehicles**.	An additional design guidance for waste collection is proposed that responds to the need for new developments to give early and adequate consideration of councils waste collection service. Waste management requirements need to be given adequate consideration early on in the design phase of the development process to ensure safe, affordable and sustainable outcomes for the community. Unfortunately, there have been many examples of developments where waste management (particularly designing for waste collection) has been an afterthought, resulting in impeded access of essential waste collection vehicles, inadequate kerbsides resulting in bins on road thereby impacting amenity and public safety, additional costs to the ratepayers and services unable to be provided by Council, resulting in residents left without recycling and bulky waste services. An additional design guidance for waste collection is proposed to ensure new developments are integrated with councils waste collection service and reflect that waste collection services for residential apartment buildings vary across local government boundaries.

		The proposed amendment requires local waste collection service to be understood and considered early on in the design process to support improved design and resource recovery outcomes. The amendment also reflects that in some instances, on-site collection is required, and this can include requiring access and loading areas that accommodate a heavy rigid vehicle. The *Better practice guide for resource recovery for residential developments (EPA)* supports the use of on-site collection systems for medium and high-density residential apartment buildings given that kerbside collection for this development type is likely to result in adverse safety and traffic impacts.
Design Guidance: Waste Storage		
In mixed-use developments, separate residential waste infrastructure from commercial waste infrastructure to facilitate secure management.		No change.
Allocate communal space for residents to temporarily store unwanted bulky items such as furniture, appliances and mattresses awaiting disposal through council's clean-up service, or to be available for re-use by other residents.	**Proposed amendment:** **Allocate communal space for residents to temporarily store unwanted bulky items such as furniture, appliances and mattresses awaiting disposal through bulky waste clean-up services, or to be available for re-use by other residents.** **Allocate communal space for residents that supports materials**	The inclusion of providing space for bulky waste items are important safeguards that reduce incidents of illegally dumping bulky waste in common areas or the footpath. Regular illegal dumping can attract other dumped waste which can detract significantly from the quality and appearance of the development and result in amenity and safety impacts. The proposed amended recommends an expansion of the design guidance to include allocation of communal space within the development footprints for problem waste. Providing space for additional waste streams such as e-waste, textiles, household batteries and *Return and Earn* containers will help to: • Increase resource recovery rates for the building and support state-wide resource recovery and waste diversion targets mandated within *Waste and Resource Recovery Strategy*

	separated at source to achieve high value recovery such as textiles, e-waste, glass, and plastics.	• Support occupants within a high-density environment with a convenient and correct way to dispose of problem waste The *Better practice guide for resource recovery for residential developments (EPA)* recognises the need for new developments to incorporate high value resource recovery. The revised ADG provides a good opportunity to align with and support best practice measures. The Better Practice Guide identifies practical solutions for how early design solutions can encourage high value recovery in residential apartment buildings and is supported by a Case Study 2: High-rise mixed-use development with a problem waste collection service.
Locate communal waste and recycling storage rooms in convenient and accessible locations for each vertical circulation core.	**Replace design guidance with:** ~~Locate communal waste and recycling storage rooms in convenient and accessible locations for each vertical circulation core.~~ **Waste storage areas are to be provide adequate capacity for storing all generated waste streams and are located to support the convenient use of all users (including waste collection staff) that supports waste stream separation and higher value recovery.**	It is the experience of many local councils that developments are failing to incorporate well designed waste management facilities that are responsive to the waste management needs of the occupants, such as waste storage areas that promote waste stream separation. This has significant impact on the resource recovery rates of the development and limits the potential for the development to fulfill broader sustainability planning priorities and objectives as well as deliver on state government led commitments on transitioning to a circular economy. The proposed amendment reflects the need for waste storage areas to be designed so that they are of sufficient size to cater for all waste streams and support waste stream separation. A key consideration in designing and locating waste storage areas within developments is the safety and convenience for all users such as occupants as well as waste collection staff and caretakers. Designing to ensure that waste storage areas are adequately sized and are conveniently located maximises higher value recovery and reducing contamination.
For onsite waste storage facilities, provide: • hot and cold water • drainage connected to the sewer		No change.

• self-closing, sealed and outward-opening dual doors • automated lighting • mechanical ventilation • waterproofing.		
Where applicable, allow for vehicle access (as required by Australian Standards) on site for local council or contracted waste collection service vehicles	**Proposed amendment:** ~~**Where applicable,**~~ **Where on-site waste collection is required by local council, waste collection vehicle access is to be designed to comply with AS2890.2**	Minor change to reflect the relevant Australian Standard and a direct link to local councils waste service.
Locate collection infrastructure for council waste collection services wholly within the development's basement and within close proximity to the onsite loading dock to permit unobstructed access for collection contractors.	**This consideration should be moved to the Waste Collection: Design Guidance**. **Proposed amendment:** **Locate collection infrastructure for council waste collection services wholly within the development's basement and ~~within close proximity~~ adjoining the onsite loading dock to permit unobstructed access for collection contractors.**	Waste collection infrastructure should be adjoining or directly opening onto the onsite loading dock for safe and efficient collection

New design guidance	**Insert the following new design guidance:** **Demonstrate that organic waste can be managed in the development through measures such as:** • **Multiple options for on-site organic waste management to maximise recovery (e.g. communal composting, worm farms, individual composting, dehydrators);** • **Organics and recycling service to all households;** • **Consolidated organic waste drop off points designed to minimise any potential odour and vermin risks. This includes the provision of rooms that are temperature controlled and suitably ventilated.**	It is proposed that additional design guidance for waste storage be included that addresses how new developments will integrate organic waste separation and collection within new developments. While some local councils may not be ready to provide an organic waste service to all new residential apartment buildings, it is important that new buildings are designed to future proof developments to ensure compatibility with future organic waste service. The *Better practice guide for resource recovery in residential developments* (EPA) identifies that "*food waste can make up 70% of the average residential bin and is a highly recyclable product when source separated*". The importance of ensuring new developments support separation of organic waste should not be underestimated and would support achieving adopted targets and commitments within the Waste and Sustainable Materials Strategy. The proposed inclusion of more specific design guidance would also better support the delivery and application of Objective 3.3.2: Minimise occupants' waste to landfill by providing safe and convenient onsite organic and inorganic waste and recycling facilities The additional design guidance for organic waste also identifies that it is also important to consider potential amenity impacts associated with the storage of organic waste which should not be overlooked in the design phase for new developments. The *Better practice guide for resource recovery in residential developments* (EPA) provides considerations for the management of organic waste (food waste) within residential apartment buildings. This is a valuable source of information for applicants and designers and could be referred to within the revised ADG, specifically Appendix E: Treatment and management of food waste.
New design guidance	**Insert the following new design guidance:** **Waste storage areas are to provide adequate capacity for storing all the waste and recycling likely to be generated between collection cycles. Developments are to refer to**	It is recommended that guidance be provided for the development to consider the likely waste generated by the development in accordance with the relevant local councils waste generation rates for residential apartment buildings. Waste generation is a key consideration in determining the required number of allocated bins (and their sizes) which will influence the size of bin storage areas for the development. Currently the ADG is silent on waste generation rates and their influence on the design of waste and resource recovery systems in new developments.

	individual council waste generation rates to determine expected waste generation and bin allocation.	
Figure 3.3.1: Waste Chutes Waste chutes for separate waste streams can offer spatial efficiencies in larger apartment buildings and provide for convenient collection and disposal of waste and recycling. Diverter systems offer further efficiencies and can be arranged with multiple compaction systems within the waste collection room. Providing a dedicated waste room on each floor can help to minimise impact on the amenity of adjacent apartments. Ensure universal access is considered.	It is recommended that Figure 3.3.1 Waste Chutes be **deleted.** **Potential amendment:** **Replace Figure 3.3.1 with a link to Appendix G of the Better Practice Guide for resource recovery in residential developments and Figure G2.2.**	Councils do not support the use of triple waste chutes and many councils do not allow the use of dual chutes. Concern is also raised over the implications of illustrating waste chutes catering for the three waste streams when many local councils are not in a position to service organic waste stream currently for residential apartment buildings and are unlikely to support this collection system in the future. In addition, local councils are waiting for further guidance on the best method for the safe and effective serving of onsite organic waste in high density residential development. It is recommended that the ADG provide a link to the waste chute system considerations provided within the guide: *Better practice guide for resource recovery in residential developments* (EPA) (Appendix G). **Figure G2.2: Cross-section of chute and bin storage and service room system** illustrates the general principles and operation of a waste chute system supported by recycling and organics bins located in the bin storage and service room on each level. Extra recycling and organics bin storage and the bulky waste storage area are provided in the basement.
Figure 3.3.2 Integrated waste rooms for separated streams offer considerable space savings compared to manual bin storage.	It is recommended that Figure 3.3.2 be **deleted.** It is recommended that a revised illustration be provided that is reflective of local councils waste and	It is recommended that the Figures for waste storage rooms be deleted and replaced with illustrations that reflect the *Better practice guide for resource recovery in residential developments.* Alternatively, WSROC and relevant local councils are available to assist in the preparation of illustrations that better reflects the servicing requirements of local councils.

	resource recovery system requirements.	
Figure 3.3.3 Waste collection room bin infrastructure for each waste stream: residual, recycling, organics.	It is recommended that Figure 3.3.3 be deleted.	Councils are concerned this figure is a poor example of bin room layout that is contrary to bin room design requirements and safe access.
New: Part 3.3A Circular Economy		
New environmental consideration to be included within Part 3: Environmental Considerations **3.3A Circular Economy**	**Insert objective:** Embed circular economy design principles into the design of residential apartment buildings to maximise the recycling and reuse of materials.	It is recommended that Part 3 of the revised ADG be amended to make to include a stand-alone design consideration for circular economy. There is a strong need for clear planning policy direction that supports the implementation of circular economy principles across all phases of the development process. The proposed amendment would better support the delivery of: • *design principle (4): design sustainable and greener places to ensure the wellbeing of people, and the environment,* and • *design consideration (8): resource efficiency and emissions reduction.*
New design guidance: Circular Economy		
To best support the delivery of circular economy principles it is recommended that the following additional design guidance be provided within the revised ADG.	**Potential Amendment**	**Comments**
	New design guidance: Ensure demolition, construction and design contribute to the circular economy. **New design guidance:**	The proposed design criteria strengthen the consideration of circular economy and best aligns with circular economy principles that have been committed by current state policy directions. This approach better strengthens the planning framework to align with current state policy targets and commitments surrounding transitioning to a circular economy and waste reduction targets. The proposed amendments reflect the current and innovative approach that has been used by the DPIE in the preparation of the draft Phase 2 Aerotropolis Development Control Plan and builds on the objectives from the Phase 1 Development Control Plan.

	Reuse and recycle construction and demolition waste, aiming for zero waste to landfill.	

Appendix 5: Furniture Schedule		
Appendix 5.2 Kitchen furniture schedule	**Potential Amendment**	**Comments**
Waste and Recycling bin required for studio apartments, but only waste bin listed for 1 bedroom, 2 bedroom, 3 bedroom and 4 bedroom apartment types.	Both waste and recycling bins listed required for all apartment types, as listed for studio apartments. Recycling bin should be included in adjacent diagrams for all apartment types. A dimension of 300mm width per waste or recycling bin is required, or displayed as 600mm if waste and recycling bins are to be integrated into one furniture unit diagram.	An allowance of 600mm is required to allow for bin configuration with space for waste, recycling and organic waste. A 600mm width provision reflects existing underbench bin systems (as preferred in the diagram notes) currently provided by existing suppliers to cater to source separation of 3-4 waste streams. Larger apartments require larger waste storage to meet to design guidance: waste collection (3:3, page 91) *"Encourage waste separation at the source, ideally in the kitchen, by providing a dedicated waste storage area within each apartment to accommodate 2 days' worth of waste, recycling and organics"*

6. BASIX

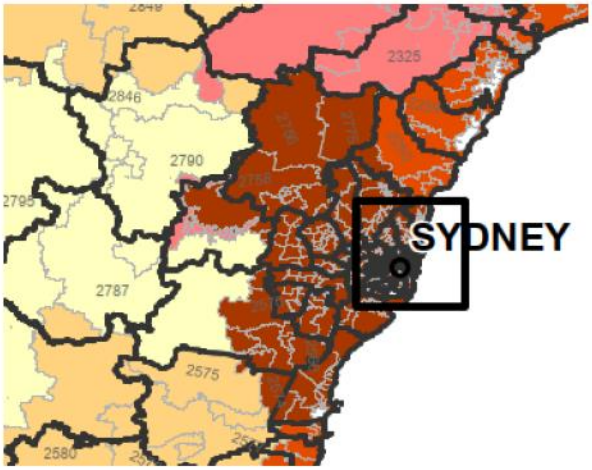
WSROC supports the review of BASIX and subsequent updates. The proposed higher targets to reduce greenhouse gas emissions and improve thermal comfort in the residential sector are supported.

We acknowledge that the proposed changes go some way towards new housing meeting the NSW Government's net zero goals, but we stress that more stringent standards will be required in future reviews to meet the net zero goal. Higher standards now would be preferred to ease future effort and costs given the long lifecycle of developments.

6.1 Improved BASIX targets for energy efficiency

We acknowledge the NSW Government's proposal to improve the standards for energy efficiency in BASIX. The higher BASIX energy performance standards vary with climate zone and building type. The BASIX Proposed Higher Standards document shows that Western Sydney spans climate zones 24, 28, 56 and 65, where proposed energy targets range from 53-72.

Current BASIX targets put most of Metropolitan Sydney into the E1A energy target zone, where energy targets range from 25-50 as outlined in Figure 1.



Energy Target Zones					
Building Type	Zone				
	E1A	E1B	E2	E3	E4
Detached and semi-detached	50	50	45	40	35
Low-Rise (3 storey units)	45	40	35	30	25
Mid-rise (4-5 storey units)	35	30	25	20	15
High-rise (6 storey units or higher)	25	20	15	10	10

Figure 1. Current BASIX Energy Target Zones.

The proposed BASIX targets use different climate zones, making it difficult to do a simple comparison between targets across the Western Sydney region:

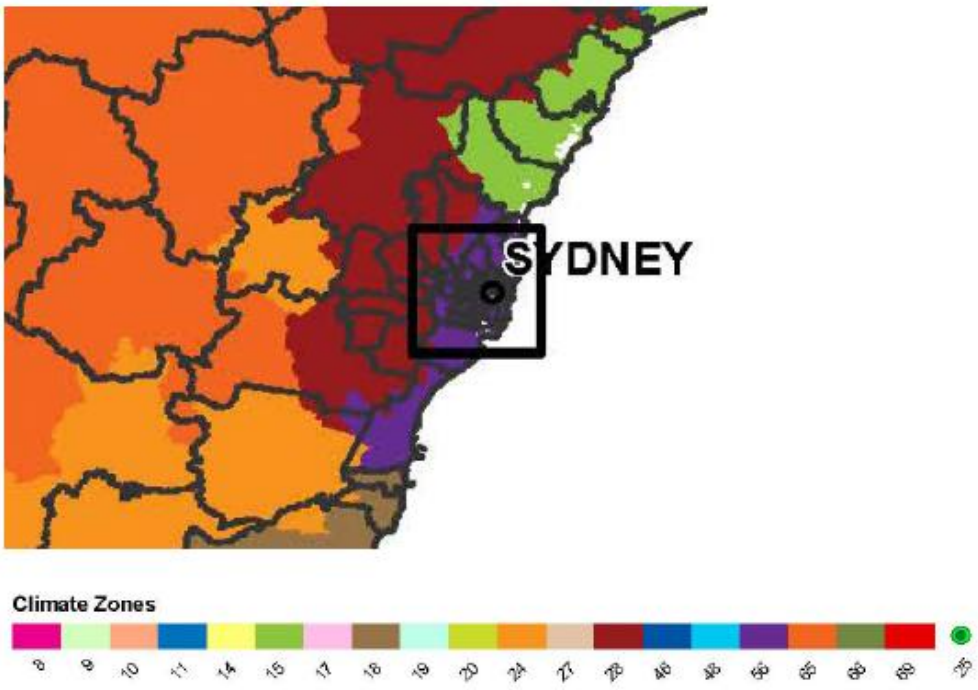


Figure 2. Proposed climate zones,

The new BASIX climate zones align with the climate zones defined in NatHERS. They appear better aligned with climatic conditions than the previous 'Energy Target Zones' shown above.

Targets for zones 24, 28, 56 and 65 are listed in Figure 2 (reproduced from the BASIX Proposed Higher Standards document).

NatHERS climate zone	Detached and semi-detached		Low rise	Mid rise	High rise	High rise
	Floor area (<= 110m^2)	Floor area (>110m^2)	(3 storey multi units)	(4 – 5 storey multi units)	(6-20 storey multi units)	(21 storey multi units and higher)
24	60	63	60	55	55	58
28	66	70	62	57	60	62
56	68	72	67	63	62	63
65	60	62	60	55	53	56

Figure2. Excerpt from BASIX Proposed Higher Standards

It is not clear in the consultation documents exactly how these numbers were set, however it appears that:

- A key part of the process has been the Cost Benefit Analysis (ACIL Allen 2021), which found that at the proposed target settings, higher construction costs for homes meeting the higher BASIX standards will, on average, be offset by energy bill savings over 12 years. There is some variation for across different locations and building types, with some examples included in the ACIL Allen (2021) report.
- The new targets account for the fact that the NSW electricity grid is becoming 'greener' with more energy from renewables. Therefore DPIE is proposing to update the greenhouse emissions factor associated with electricity consumption, which will help all buildings meet the higher targets.

- The Government expects higher targets to encourage:
    - Lower emission hot water systems (e.g. electric heat pump rather than gas)
    - Electric cooking appliances rather than gas
    - More efficient air conditioning systems and/or solar PV systems.

Recommendations:

- Increase the BASIX energy targets in-line with proposal
- Commit to reviewing BASIX targets every few years to ensure they remain up to date
- Implement alignment of BASIX with NatHERS climate zones in-line with proposal
- That further analysis is conducted to provide a better picture of the implications for Western Sydney – noting the significant and growing variations in climate across that area.

6.2 Improved BASIX targets for thermal performance

WSROC strongly supports improvements to thermal performance targets under BASIX. Updates to these targets are well overdue, and recent research by Waverly City Council has demonstrated the inadequacy of current targets for maintaining thermal performance in future climates. Given Western Sydney experiences far more extremes than Sydney's beach-side suburbs, we suggest that updates are even more important in the western half of Sydney.

As with energy efficiency, the proposed thermal performance standards vary depending on the NatHERS climate zone and the building type. Therefore there are different targets set to apply across Western Sydney. These are in the form of revised heating and cooling caps.

In terms of performance, DPIE states:

> *The higher BASIX thermal performance standards will be at least 7 stars, based on the star-rating scale defined by the Nationwide House Energy Rating Scheme. This is consistent with what the Federal government proposes for the National Construction Code for 2022. Currently, homes that comply with BASIX have been achieving 5.5 to 6 NatHERS stars on average.*

However, WSROC is concerned that the higher standards would **not apply** to 'small' apartment buildings of up to five storeys (as per the Cost Benefit Analysis proposal). This could exclude a significant number of dwellings, particularly in higher-density areas where the UHI effect is greatest.

WSROC welcomes DPE's intention that higher standards be met with improved passive design, for example more insulation, improved windows, good air flow, shading and sunlight to cool and heat homes naturally. We note there remains an assumption that most homes will rely on an air-conditioner to maintain thermal comfort.

WSROC congratulates DPE's decision not to proceed with the proposal of thermal performance trade-offs as outlined in the Explanation of Intended Effects (EIE). Thermal performance standards are critical health and safety measures that should not be compromised. Allowing trade-offs to a

dwelling's thermal performance in favour of air-conditioning would have dire consequences for public health and energy network resilience.

Changes to BASIX thermal performance standards appear to include an update to climate data, however they do not account for future climate change.

> *BASIX thermal performance standards are developed using NatHERS to estimate heating and cooling loads. The NatHERS model is based on past meteorological records and has been updated to cover weather data up to the year 2015. It does not include future climate projections.*

This does not align with the broader planning objectives of building resilient communities. It is recommended that future revisions consider future climate scenarios in the assessment of new dwellings.

Finally, thermal performance targets remain focused on thermal comfort (with air-conditioning), there is no inclusion of a thermal safety or thermal autonomy standard that would ensure occupant safety in a no-energy scenario. WSROC would like to see DPE go further to reduce hazard risk and protect the health and safety of Western Sydney residents. A thermal autonomy standard would deliver greater resilience to Sydney's number one hazard (heatwave) and deliver greater outcomes for NSW's Net Zero plan.

Recommendations:

- Implement proposed increases to thermal comfort targets. These targets will need to be reviewed every few years
- Implement proposed updates climate data used for energy and thermal comfort assessments, and ensure data is updated regularly
- Maintain policy of no trade-offs to thermal performance in new dwellings
- Investigate the use of future climate scenarios in the design of new homes to build long-term resilience
- Investigate inclusion of a thermal autonomy (safety) standard that will allow dwellings to protect occupant safety in no-energy scenarios and heatwave events
- Conduct further analysis to understand how Western Sydney homes would meet the new targets, and to what extent homes that comply with the new targets would protect their occupants from extreme heat.

6.3 BASIX water targets will not be changing

There are no changes proposed to the water targets in BASIX. From an urban heat perspective, this means:

- BASIX will still encourage low water use landscaping and minimal irrigation, even though irrigated landscapes help lessen the impacts of urban heat.

- BASIX will still offer limited incentive to consider alternative water supplies. In multi-unit development, it is typically easy to meet the water targets with no alternative water supply other than mains water. This limits residents' options to use water for cooling.

Recommendations:

- Revise the water module in BASIX, so that it is no longer purely focused on water efficiency but also designed to encourage more rainwater harvesting, sustainable landscape irrigation and other water use for keeping cool.

6.4 Allow Local Government flexibility to set higher targets

WSROC is disappointed to see that the updated BASIX continues to prevent local government from introducing its own targets and place-specific responses for BASIX. Flexibility is important to allow councils to respond to local risks and the aspirations of their community to set high BASIX standards for their community. For Western Sydney councils this is particularly important to be able to address areas that are at high risk of urban heat.

Recommendation:

- The NSW Government enable a process whereby councils can apply higher BASIX standards with the concurrence of their community.

6.5 Ensure compliance is appropriately funded

There have been recent local and international high-profile examples of buildings, structures and infrastructure that have highlighted where statutory controls have not been implemented or enforced leading in some cases to loss of life, injury, and cost.

This highlights the importance of ensuring that BASIX governance, including compliance assessment, certification and implementation, is appropriately resourced.

We further note that different standards have also been proposed across the Nationwide House Energy Rating Scheme (NatHERS) climate zones, increasing the number of targets to 114 compared to the current 20 targets. This introduces an additional level of complexity for both the applicant and council assessors. Additional training will be required to ensure implementation of these changes is clear to all stakeholders.

Recommendations:

- BASIX compliance be funded to ensure the integrity of the program and that efficiency standards are realised
- The NSW Government provide additional education and training on the review of standards and expected update to the BASIX tool to a range of stakeholders including council officers.

6.6 Transparency of methodology

There proposed update has changed the methodology of the BASIX tool as well as updated emission factors. However, there remains a lack of transparency around the new methodology.

In addition, we note that the proposed BASIX standards apply differently depending on dwelling classification. Again, no justification has been provided why standards vary within the same dwelling type and this raises issues of equity for NSW residents.

Recommendations:

- The NSW Government be transparent in future updates to the BASIX methodology
- Greenhouse gas reduction targets be consistent across all dwelling types.

6.7 Gas

The draft Design and Place SEPP is excluding, as far as practicable, the use of on-site gas for cooking, heating and hot water, for subdivision development. WSROC argues that on-site gas should be limited across all residential development and should not be referenced within the BASIX tool.

Electrifying development, fostering the use of the most efficient technologies available and sourcing electricity from renewable sources is needed to reach net zero. Installing new on-site gas is counter to the NSW Government's net zero goal and becomes a costly retrofit in apartments.

***Recommendation*:**

- Exclude on-site gas for cooking, heating and hot water.

7. Draft Local Government Design Review Panel Manual

Section 2.6 Panel member induction and training	**Potential amendment**	**Comments**
Panel members should complete an induction and training before the first session of a design review panel. As a minimum, training should cover: • Understanding conflicts of interest and codes of conduct • Confidentiality • The NSW protocols for good design review • How to use the DP SEPP design • Principles to frame a discussion and provide advice • The local planning context • Confirmation of the panel members • Availability for all sessions.	Panel members should complete an induction and training before the first session of a design review panel. As a minimum, training should cover: • Understanding conflicts of interest and codes of conduct • Confidentiality • The NSW protocols for good design review • How to use the DP SEPP design • Principles to frame a discussion and provide advice • The local planning context • **Local council waste service** • Confirmation of the panel members • Availability for all sessions.	It is recommended that the Manual be amended to provide recognition on the importance of understanding the relevant local council waste service for panel members. To assist in securing optimum planning and waste management outcomes for residential apartment buildings, it is essential that panel members have a strong understanding of the local waste service including waste collection vehicles (sizes) and how waste is collected. It is our experience that the consideration of waste and resource recovery are not highly valued in the design and planning stage of developments and are often overlooked in the early design stages. Failure to provide due consideration and correct advice regarding local councils waste service responsibilities and requirements can have significant impacts on the design of the development that are often costly and timely for both the applicant and local council. These costs are often then passed on to the wider community, who are left with not only the financial burden but adverse amenity and safety impacts. While local councils have the responsibility to provide residential waste services under the *Local Government Act 1993,* it is important to also note (and understand) that variations across local government boundaries vary significantly. The proposed amendment would ensure that adequate training and information are provided to panel members so that they are best placed to provide design advice that also aligns with individual council waste servicing requirements.

Failing to adequately design and construct waste storage and collection facilities in apartment buildings can have significant impact on amenity, safety of the building footprint and the neighbouring vicinity and streetscape. While design experts generally understand the ramifications of failing to address the needs of other essential service requirements such as fire safety, electricity, water and sewage, the outcomes of poor waste management servicing on safety and amenity are far less understood. The following images demonstrate the reality of poor design outcomes.

Figure 3: Inadequate waste storage due to bin bay not being built to requirements (overflow waste).

Figure 4. Bins awaiting collection from kerbside (no onsite collection) blocking roadway and access of parked car.

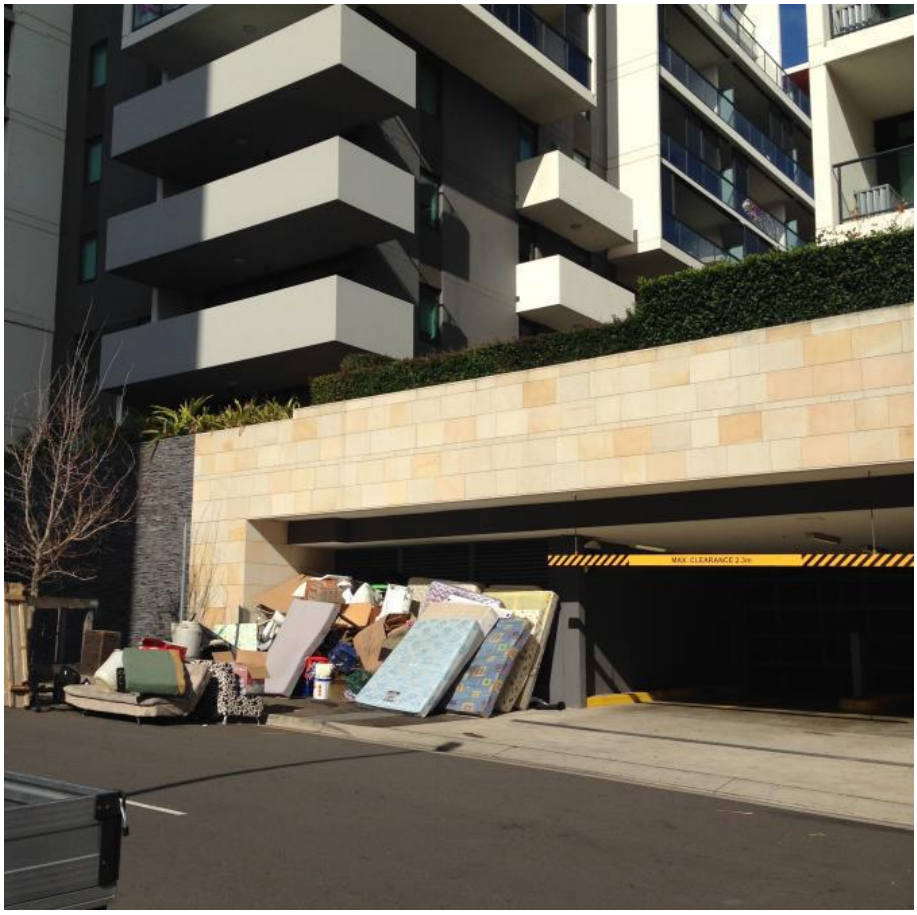


Figure 5. Inadequate provision of bulky waste storage and collection requirements.

Figure 6. Inadequate provision of waste storage for the developments' estimated waste generation.