Dear Mr Lennon

RE: NATURAL RESOURCES AND ENVIRONMENT POLICY DISCUSSION PAPER - RESILIENT EAST FEEDBACK

The Resilient East Project Steering Committee (the Committee) welcomes the opportunity to provide feedback on the Natural Resources and Environment Policy Discussion Paper. The Resilient East Project is a partnership between the Campbelltown City Council, the Cities of Adelaide, Burnside, Norwood Payneham & St Peters, Prospect, Tea Tree Gully, Unley and the Town of Walkerville and the South Australian Government, as detailed in Appendix 1. This submission is part of the ongoing participation by the Resilient East Steering Committee to contribute to the planning reform process.

This input does not reflect formal Council consideration by any of the constituent Councils. Councils may make individual submissions to this process.

The Committee has invested considerable effort into reviewing and providing submissions to help inform the various planning reform Discussion Papers and reform initiatives. To date, no response has been received to any of these submissions and the Committee would welcome more comprehensive dialogue and engagement on the policy proposals. The Committee requests a response as to how the feedback on all the submissions made by the Resilient East Committee is being addressed and incorporated into the Planning and Design Code and planning reforms more generally.

Purpose of Feedback

The key purpose of the Committee’s feedback is to ensure that the State Planning Policies adequately align with the key priority actions outlined in the various South Australian Climate Change Adaptation Plans, including the Resilient East Regional Climate Change Adaptation Plan.

Our scope of interest in the planning reform process is aimed at climate adaptation including community preparedness and resilience, sustainability, canopy and green cover, water management and biodiversity.

The Planning Natural Resources and Environment Policy will play a critical role in determining the liveability for future generations of South Australia and the Adelaide Metropolitan area and our preparedness for continued climate change.
Summary of Key Points to acknowledge in a ‘What we have heard´ document’

1. Achieving the desired outcomes of Green Adelaide will require detailed strategies within the Planning and Design Code to guide:
   - 20% increase in canopy cover by 2045
   - healthy urban biodiversity
   - good design outcomes that enable sustainability (energy, water, landscaping) and preparedness for climate change
   - targeted monitoring and policy evaluation

2. Biodiversity (urban or rural) must be supported on a whole of landscape approach to support populations and connectivity. For biodiversity to continue, particularly in an urban environment, it will be necessary to preserve healthy garden and canopy habitat that is interconnected to form a broader biodiversity network.

3. Whilst Councils are taking significant steps to increase canopy and green cover on public land, many Councils are concerned about the loss of Regulated Trees, canopy, biodiversity habitat and nature corridors on private land. Councils believe that there can be better approaches to protect and design-around these natural privately owned assets.

4. Where it is not possible to protect, restore and enhance natural assets on private land there is likely to be increased pressure on Councils to increase canopy cover, biodiversity plantings and Water Sensitive Urban Design infrastructure on public land. This approach is put forward in the Natural Resources and Environment Discussion Paper, reducing the responsibility on private landowners and increasing the onus on Councils to make up for environmental shortfalls on private land. This will create operational costs that may not be financially achievable by some Councils and should be met with external funding contributions.

WHY ARE NATURAL RESOURCES AND THE ENVIRONMENT IMPORTANT?

The Discussion Paper has described fairly the importance of protecting the environment in terms of the benefits for the community and our society. However, it has not taken into consideration the benefits of protecting the environment for itself beyond the needs of humans.

*The recently released State of the Environment Report for South Australia highlights that environmental health is trending downwards in many areas: The report also identifies that “Opportunities for improvement are in monitoring and risk assessment to inform planning, investment and management of urban warming, coastal risks, threatened habitats and aquatic ecosystems”.*

The Discussion paper states that “We recognise that past decisions have changed our natural environment”, but does not acknowledge the ongoing decisions that are being made that continue to change our natural environment (see Figure 1).
Extract of trend examples relating to climate Change and Biodiversity

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Observation</th>
<th>Trend</th>
<th>Condition</th>
<th>Reliability</th>
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</thead>
<tbody>
<tr>
<td>Woody native vegetation</td>
<td>Woody native shrubs are replacing low native vegetation in some areas across South Australia</td>
<td>⬤ stable</td>
<td>⬤ unknown</td>
<td>⬤ excellent</td>
</tr>
<tr>
<td>Low native vegetation</td>
<td>Low native vegetation is transitioning to agricultural land and woody native shrubs in some areas of South Australia</td>
<td>☑ getting worse</td>
<td>⬤ unknown</td>
<td>⬤ excellent</td>
</tr>
<tr>
<td>Land: native fauna</td>
<td>The statewide trend in populations of land native fauna shows a continuous decline, which is due to a range of ongoing pressures</td>
<td>⬤ getting worse</td>
<td>⬤ fair</td>
<td>⬤ fair</td>
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<tr>
<td>Land: native flora</td>
<td>The statewide trend in populations of land native flora shows a continuous decline, which is due to a range of ongoing pressures</td>
<td>⬤ getting worse</td>
<td>⬤ good</td>
<td>⬤ fair</td>
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<tr>
<td>Land: Invasive species</td>
<td>The trend in the abundance and distribution of established invasive species shows a continuous increase</td>
<td>⬤ getting worse</td>
<td>⬤ poor</td>
<td>⬤ poor</td>
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<tr>
<td>Aspect</td>
<td>Observation</td>
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<td>Condition</td>
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<tr>
<td>Climate Rainfall</td>
<td>Since 1980, April to October rainfall in the south has decreased and November to March rainfall in the north has increased</td>
<td>getting worse</td>
<td>fair</td>
<td>very good</td>
</tr>
<tr>
<td>Climate Projected Rainfall</td>
<td>Annual and spring rainfall across South Australia is projected to decrease significantly by 2050</td>
<td>getting worse</td>
<td>not applicable</td>
<td>fair</td>
</tr>
<tr>
<td>Climate Temperature</td>
<td>Average annual temperatures have increased across the state in the past 40 years, especially in the arid and northeast</td>
<td>getting worse</td>
<td>fair</td>
<td>very good</td>
</tr>
<tr>
<td>Climate Projected Temperature</td>
<td>Higher maximum temperatures and more days above 40°C are projected for South Australia</td>
<td>getting worse</td>
<td>not applicable</td>
<td>fair</td>
</tr>
<tr>
<td>Climate Sea Level</td>
<td>Sea levels along South Australia’s coast are rising, and the rate of rise is projected to increase in the future</td>
<td>getting worse</td>
<td>fair</td>
<td>very good</td>
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Figure 1: Extract from State of Environment Report (2018) \(^1\)

**BENEFITS TO PEOPLE RESIDING IN CITIES DERIVED FROM CONNECTING WITH WILDLIFE**

There is a need to celebrate that many species can still co-exist with people and consider how good planning can incorporate ways to meet the needs of these populations and create and connect more habitat.

The comment by Professor Chris Daniels that “The successful incorporation of biodiversity must be considered at all stages of urban development” is fully supported. However, the vast majority of

urban development demonstrates that biodiversity is generally not considered at all stages. It is imperative that Deemed-to-Satisfy and Performance Assessed policy incorporate retention of vegetation (Regulated Trees and Significant Trees), planting requirements, Water Sensitive Urban Design (WSUD) Assessment Tool, and energy efficiency measures (including protection of access to light for solar panels on adjoining sites).

- **Liveability, wellbeing and inclusion**
  This section does not make reference to sustainability

- **Economic Competitiveness**
  This section refers to sustainable economic development

- **Missing – Biodiversity, and ecosystems**
  A section is required to guide development to contribute to meeting environment and ecological needs.

**WHAT ROLE DOES PLANNING PLAY**

The Planning Framework is a critical tool providing direction towards sustainable development and must be strengthened if the cumulative outcomes for community resilience, increased green cover and improved biodiversity are to be achieved.

The Planning framework plays a key role in guiding the protection of existing environmental assets in urban and rural landscapes. It is not clear to date how the planning framework will influence, leverage and in some cases mandate changes required.

The document correctly identifies that there are other levers, in addition to the planning framework, however, it is only the planning framework that can drive sustainable development in land use planning and built infrastructure.

It is agreed that “new planning system, we have an opportunity to lead by example in protecting the natural environment, contributing to tourism opportunities and increasing liveability”. To achieve this vision together with the aspirations of Green Adelaide and one of the world’s most ecologically vibrant urban ecosystems a number of gaps in the planning framework will need to be addressed:

- **Missing** – Protection of environmental assets that are not located in areas of environmental significance such as regulated trees, roadside vegetation, remnant native vegetation and habitat, urban habitat in trees and gardens.

**Comment** - The current planning strategies do not provide sufficient direction for emergency management and hazard avoidance with regard to bushfire risk. Currently, development proposals can be approved in unsafe locations requiring subsequent incidental clearance of native vegetation and may still be highly vulnerable to the impacts of bushfire.

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2 Sustainable development is defined as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development (WCED) Bruntland Report, 1987).
Issue - Current planning strategies do not adequately recognise or protect environmental assets. With the exception of a very small number of regulated trees and some mitigation strategies in larger developments, the current planning strategies often allow the removal of environmental assets.

We strongly support the environmental direction in the new Planning and Design Code are well placed to collaborate on how to achieve improved environmental outcomes.

Strategic framework guiding the Code

The Preparation of the Planning and Design Code must maintain connection for the primary objective of the Act including: "to support and enhance the State's liveability and prosperity in ways that are ecologically sustainable"

External levers can assist in the delivery of sustainability outcomes in constructed developments, but only where the foundation for this to occur has been integrated in the planning, design and construction stages. More detail is required in the Planning and Design Code and overlays to assure that the Planning Framework will support sustainable development outcomes.

Climate change mitigation and adaptation

The section provides a very brief overview of the need to integrate climate adaptation and mitigation into development approvals, but requires detailed recommendations and targeted mechanism to follow. The challenge requires clear goals and strategies.

How will our new system protect and enhance our natural resources and environment?

For each of the following 5 themes, there are identifiable challenges and suggestions made for the Planning and Design Code and overlays to deliver sustainable development. The discussion questions are also addressed under each theme.

THEME 1: Sustainable and Liveable Urban Environments

1.1 Green Infrastructure and water sensitive urban design

CHALLENGES

It is becoming increasingly evident that the cumulative impact of small scale infill development with high impervious areas is contributing to increased stormwater volumes, decreased tree canopy cover and compromised water quality. Green Infrastructure and WSUD not only needs to be mainstreamed and mandatory, but it needs to be planned to complement landforms, urban biodiversity habitat (trees and gardens), and connectivity of green cover and habitat.

The current planning framework supports development which does not incorporate WSUD. In urban infill development, dwellings must be provided with rainwater tanks which can minimise peak flows and reduce some potable water use, however the retention size is generally minimal and the option of underground tanks results in tightly packed development with no green open space or green infrastructure.
The Discussion Paper references the Water Sensitive SA online WSUD assessment tool to enable the simple assessment of WSUD requirements. The use of this tool is supported, as it is expected to significantly improve issues relating to excessive stormwater runoff from development sites, which places unreasonable burden on local stormwater infrastructure, amongst other issues. The issue of particulates and pollution from bitumen roads including from tyres and exhaust is causing serious harm to the River Torrens and other key waterways but can be addressed through settlement and detention basins in new developments and urban redevelopments when changes are made to stormwater systems.

During testing, it appears as though the current standard of 1000 litre rainwater tanks and typical levels of impervious area will not satisfy the assessment tool. Further consideration should be given to Planning and Design Code policies which appropriately guide on-site stormwater management (such as split detention and retention, permeable paving etc.) which is consistent with this assessment tool. Additionally, the Discussion Paper refers to the Performance Based Planning Provisions and Assessment Framework for Green Infrastructure and Water Sensitive Urban Design Background Paper however this paper has not been made available during the consultation period for this Discussion Paper, which limits our ability to provide feedback on this issue. We look forward to providing feedback on this paper.

Green infrastructure concepts are not sufficiently being incorporated into building design. Outcomes include roof areas that are not suitable for greening (through roof-top gardens) or renewable electricity optimisation (such as solar panels).

**OPPORTUNITIES**

WSUD implementation should be a mandatory requirement on public and private land in order to provide multiple benefits for soil, improved water quality, biodiversity, and green cover.

There is a need to strengthen WSUD requirements in the Planning and Design Code. As outlined above, the current requirement for minimal on-site stormwater retention limits the opportunity for natural above ground flow pathways. Integrated retention and settlement options can also improve soil moisture, green cover and biodiversity and should have an increased priority in planning policy.

To achieve better biodiversity and improve the condition of streams and rivers, the Planning and Design Code could establish some high level objectives or more specific requirements including:

- Clean water for the environment by preventing road to river (or stream) run off
- Roof-top gardens for medium density buildings (3 storeys or more)
- Encouraging or requiring the retention of biodiversity at all scales of development
- Maintaining biodiversity connectivity between development sites and established biodiversity areas

**Discussion Question:** How can offset schemes support delivery of GI and WSUD

**Response:** The use of offset schemes could enable the creation of quality green cover, biodiversity habitat and open space but should proceed under very clear principles as a last resort, not business as usual.

For Green Infrastructure (GI) and Water Sensitive Urban Design (WSUD), a GI & WSUD hierarchy could be used to guide sustainable development that meets the Government’s climate adaptation, green cover, biodiversity and sustainable water management goals.
The following strategies could also assist:

- Protect and continue to use the environmental services from existing trees, gardens and biodiversity habitats.
- Incorporate GI and WSUD requirements within new developments (ranging from single dwellings to large projects and precincts) to maximise outcomes in open space, sidewalks, rooftops and water management.
- Where there is a shortfall of GI & WSUD outcomes within a development and where it is substantiated that all feasible options have been explored, the developer can contribute (full cost recovery) to an offsite initiative (through an offset contribution) which is:
  - as near to the site as possible
  - in a location that provides multiple benefits such as canopy and greening, urban heat mitigation, biodiversity habitat and providing clean water for the environment.
  - Suggestion: Full cost recovery should include an allocation for the administrative and maintenance costs required to offset and consider being higher than full cost recovery to act as an additional disincentive for developments to rely on offset functions.

The Resilient East project partners provisionally support the opportunity for an offset mechanism to be used to recover sufficient and appropriate sites where offset initiatives could be applied, subject to the locations of those sights being suitable for WSUD and connecting biodiversity, and there being a mechanism to meet the operational cost of maintaining those sites. However, such an offset scheme requires careful parameters, to avoid incentivising contributions to an offset scheme in lieu of any attempts to resolve the situation on site, which is the preferred option.

Cost impacts of offset schemes

Unlike native vegetation offsets, WSUD and greening/biodiversity based offsets have a higher operational cost for maintaining equipment, and managing vegetation. Any transfer of private land greening to the public realm will cause Councils and other public land managers. Significant additional costs and will require a mechanism to fund the higher operational cost, particularly for smaller regional Councils.

<table>
<thead>
<tr>
<th>Ref No.</th>
<th>Key opportunities and challenges</th>
<th>Proposed response</th>
<th>Proposed timing 1.1 Infrastructure and Green Infrastructure and Water Sensitive Urban Design</th>
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<tbody>
<tr>
<td>1A</td>
<td>Councils that have converted to the SAPPL have introduced provisions that support the inclusion of WSUD principles in urban areas, including stormwater management. It is important to review and transition these to the Code.</td>
<td>Review, refine and transition existing SAPPL WSUD policy where appropriate. It is noted that the Water Sensitive SA Report referred to in the Discussion Paper is not currently available. Should tighten with requirements for on-site WSUD policy/requirements</td>
<td>Transition ready</td>
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There is increasing recognition of the value of GI in creating cooler, more liveable and economically viable neighbourhoods. To this end, GI policies were introduced in 2017 to some higher density mixed use zones in Development Plans in metropolitan Adelaide. There is an opportunity to transition these over to the Code, where appropriate.

**Review and transition existing SAPPL GI policy1 where appropriate.**

**AGREE Need to incorporate in all development as default and consider reasons for exception.**

Requires a higher standard of outcomes for new multi-storey carparks, apartments and other larger sites/ developments.

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<tr>
<th>1B</th>
<th>There is inconsistent policy across some Development Plans to manage stormwater volume and, in some cases, WSUD policy is applied inconsistently. Currently some WSUD policy is applicable only to master planned/large scale developments and not to small scale in-fill, which is an increasing percentage of new development. Policy is therefore needed that is scalable to cater for all development types.</th>
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<td></td>
<td>Develop new ‘Deemed to Satisfy’ and ‘performance outcomes’ policy for WSUD and GI1. AGREE. Managing for volume only does not assist Greening, Biodiversity, soil moisture and clean water for the environment. The Water Sensitive SA WSUD assessment tool incorporates water quality objectives. Further clarity is required as to the scope, timing and mechanisms for introducing the WSUD assessment tool into the new planning system.</td>
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<td><strong>Reform (Gen 1)</strong></td>
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| 1C | In infill areas, where there is limited private land, there may be an opportunity to consider off-site GI and WSUD solutions where appropriate. This may provide an efficient and affordable model for delivering urban green cover and tree canopy targets in line with The 30-Year Plan for Greater Adelaide and state WSUD objectives. |
|    | Explore policy that connects the ability of road reserves to accommodate tree planting or other suitable GI in lieu of provision on private allotments. CAUTION This option is supported but there should be acknowledgement that insufficient on-site canopy, area of habitat and connectivity will not support biodiversity and greening for cooling purposes. This is not supported if road reserves are the ONLY place proposed to accommodate tree planting - this places too much demand on Local Government and already highly congested spaces which accommodate services, vehicle crossovers, bin collection, pedestrian access, outdoor dining etc. |
|    | **Reform (Gen 2 and beyond)** |
Discussion Question: Should existing WSUD and GI policies also apply to regional areas and for all development scales and types?

Response: Green Infrastructure and Water sensitive urban design should be integrated into all regional areas and for all development scales and types as these elements are the foundations for sustainable development. As a critical climate adaptation response, creating cooler and greener places is just as important for built infrastructure in regional areas. The need for creating greener canopy and shrub cover to support cooler microclimates and biodiversity in regional areas is also as important and in many situations more achievable in locations where more land and open space is available for greening and to support biodiversity.

1.2 Energy efficient design

Challenges
Current design policies which address or require energy efficiency measures should be strengthened.

New development precincts are often characterised by dark rooftops surrounded by grey pavers, concrete and bitumen with minimal tree canopy and minimal, ornamental plantings.

Opportunities
- Energy efficient designs should incorporate optimal use of canopy and green cover to complement the structural components of the development.
- Policies could prohibit darker and black rooftops by using a reflectivity threshold (without creating reflection or glare hazards with the use of zincalume or similarly reflective materials).
- Policies (such as the Water Sensitive SA WSUD Assessment Tool) could specify a degree of permeability required for paved areas which are not of a structural nature.
- Policies could seek to optimise renewable energy generation and storage in new precincts at both the individual and precinct scale.
- Similar to minimum access to natural light, policies could require minimum access to rooftop light for existing and/or future rooftop solar panels.
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<td>1.2</td>
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<tr>
<td>1E</td>
<td>These policies are relatively sound and are ready for transition.</td>
<td>Review existing SAPPL energy efficiency policies and undertake consolidation and minor refinement where necessary. Need to integrate with canopy and green cover. Should establish standards for heat reflectivity for rooftops and other surfaces</td>
<td>Transition ready</td>
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<tr>
<td>1F</td>
<td>There is an opportunity to better apply energy efficiency policies to non-residential buildings such as consulting rooms, offices, educational establishments, retail and community, where there is a high level of human use.</td>
<td>Review energy efficient policies relating to non-residential building types. AGREED, also include multi-level car parks and apartments which can be built in a way that incorporates renewable energy, rooftop gardens for biodiversity and green living sidewalks</td>
<td>Reform (Gen 1)</td>
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<tr>
<td>1G</td>
<td>There is a need to give better consideration to sustainable design outcomes including overshadowing of solar panels and solar hot water services. On the neighbourhood scale, policies could encourage consideration of community or shared energy-saving facilities.</td>
<td>Review and draft new policies to achieve better sustainable design outcomes and ensure the appropriate application of sustainable design policy to all relevant development/land use types.</td>
<td>Reform (Gen 1)</td>
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**Discussion Question:** What role should the planning system play regarding preservation of sunlight to solar panels from adjacent development?

**Response:** South Australian households have the highest rate of adoption of solar technology in Australia, so it is important that this investment in renewable energy is protected through appropriate planning policy. This adoption rate is likely to only increase into the future, particularly with increased uptake of solar storage batteries and electric vehicles.

In greenfield development areas, there should be integrated precinct design that provides for solar generation opportunities through allotment orientation and width to facilitate sufficient setbacks. Precinct scale design will be required to facilitate solar generation opportunities whilst also achieving a minimum 30% canopy and green cover and connected biodiversity habitat.

For redevelopment in established areas, the Planning and Design Code should require shadow diagrams or modelling as part of the application lodgement. The policies should require adequate setbacks in relation to wall heights, and specify...
minimum solar access requirements for existing solar panels and/or a specified area of any north facing roof (to preserve an area for future solar panels). An approach could be inserting “shade” to the existing items in PDC1 of the SAPPL “Interface Between Land Use” modules.

Optimal renewable energy generation / storage mix should be considered for areas such as The City of Adelaide where it is forecast that tall buildings or medium height buildings with a physically large footprint will exist - as other renewable energy options may be more appropriate to meet energy needs of the proposed development.

Discussion Question: Should the Code introduce incentives for developments that can incorporate passive solar design (siting) techniques, green infrastructure and WSUD?

Response: In order for the new planning system to produce a genuinely sustainable future for the State, it is essential that sustainability measures (such as GI, WSUD and climate resilient buildings) are required by future policies, rather than just incentivised.

The treatment of sustainability measures as incentives results in these measures being viewed as voluntary ‘ad-ons’ and implies that a development without passive solar design, GI or WSUD treatments would be acceptable. To address the impacts of climate change and to take responsibility for our environmental footprint, these elements need to be an integral and mandatory consideration as part of the development design, and assessed against the Planning and Design Code policies, not rewarded as an incentive.

Under the current framework, the clearing to a level site continues to be the preferred starting point for many developments causing:

- Total loss of canopy cover and biodiversity habitat causing fauna destruction and displacement;
- Inadequate re-establishment of canopy cover, shrub cover and plant types that can support biodiversity; and
- A breaking up of functional urban biodiversity and corridors (typically the urban established gardens and trees).

Policies requiring design around natural assets and restoring lost canopy cover and biodiversity habitat could assist in overcoming these issues.

The ‘Planning and Design Code - How Will It Work Technical Discussion Paper’ released earlier this year foreshadowed that Planning and Design Code policy will not address work and activities which do not constitute ‘development’. While the intent is understood, there are various elements of a development which do not fall into the definition of ‘development’ in their own right, but are important aspects of a site, such as soft landscaping, paving, fencing etc. It will be challenging or even impossible to adequately address GI and WSUD if there are no policies regarding landscaping and paving etc.
Discussion Question: How can planning policy contribute to reduced carbon emissions from the built environment sector?

Response: At the highest level, the planning framework can require sustainable development outcomes and to contribute to limiting further global warming to below 1.5°C for individual developments, at a precinct scale, and at a broader landscape scale including:

- Creating cooler more liveable places using green cover, passive design, smart orientation and cooler surfaces to reduce energy use and therefore emissions;
- Good building design to reduce energy used to operate air conditioning and heating systems;
- Good design and connection with various forms of physically active transport and public transport will reduce emissions; and
- Passive WSUD systems can increase soil moisture and reduce the need for supplementary watering.

The current National Construction Code requirements (such as 6 star energy rating) are not considered to provide best practice outcomes. There should be an increased emphasis on design requirements at the planning assessment stage, and additional training and education for planners, builders and the development industry - both to ensure that these principles are included up-front.

1.3 Waste Management

Challenges

- The cost of waste disposal is increasing.
- The cost of contamination in recyclables is a key issue. Restrictions put in place by China to reject Australian recyclables with high contamination rates now means that more effort is required to keep waste streams separate.
- Demolition may result in reusable materials not being properly removed due to cost constraints.
- Looking at building sites, the level of building waste is currently excessive. This includes, but is not limited to, large amounts of timber, steel cladding, gutter sections, gravel, sand, concrete, and electrical wiring. Sometimes this includes full lengths of fabricated materials and over orders.
- Subdivisions and increased density (including high-rise) causing verges to be compromised/squeezed for space – competing demands between crossovers, verge plantings and placement of bins can create aesthetic and odour issues.
- Driveways / private roads that do not accommodate the dimensions, turning circles or weight of waste collection vehicles.
- Waste separation and storage not being adequately planned for mixed use and medium to high density developments.
Opportunities
Waste Management should be addressed as an integral part of all new developments. A review of current two bin and three bin options may be required. There may be opportunities to not only consider the optimal pickup schedules, but also to consider precinct scale drop off and collection points for certain streams such as e-waste, light globes, small batteries (no automotive), and glass.

The Planning and Design Code should specify a requirement for a waste management plan for multi-unit development.

The use of recycled materials and recyclable materials in new developments and construction techniques should be encouraged and potentially incentivised to support and grow local recycling markets.

A better approach could include:

- Medium/high-rise apartments/developments – incorporating internal chutes for all 3 or 4 streams, with bulk bins (660L, 1100L etc.) for collection in the basement/ground level, and eWaste/hard waste.
- Incentives to minimise building waste and maximise reuse and recycling from development sites.
- Incentives to increase the re-use of materials from demolition sites, particularly timbers and fittings.
- Incorporate different bin systems, such as larger bins such as communal bin systems for multi-dwelling developments.
- Policy to specify the threshold over which development will require a waste management plan and/or provide waste collection servicing.

Suggestions on the proposed response (marked in in red)

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<tr>
<td>1.3 Waste Management</td>
<td>1H These policies are relatively sound and are ready for transition.</td>
<td>Review existing SAPPL policies and consider minor refinement where necessary. Noting the refusal of China to take Australia’s recyclable waste, a new approach is required to fully transition to a circular economy</td>
<td>Transition ready</td>
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<td>1I Some buildings (particularly high-rise) have inadequate space to store and/or sort the refuse and recycling generated by them. This needs to be considered as part of the development from the beginning. Policy also needs to provide enough flexibility to respond to new technologies (for example smaller/more adaptable waste relocation vehicles).</td>
<td>Review existing SAPPL policies, consider best practice council policies that focus on dealing with waste in a higher density environment and identify opportunities for improvement. AGREED on both a building and precinct scale, calling upon guidelines such as “Better Practice Guide for Waste Management for Residential and Mixed Use Developments”</td>
<td>Reform (Gen 1)</td>
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Discussion Question: How do we plan for current waste removal practices and technologies and provide flexibility for innovative future solutions?

Response: Planning for future waste management should enable a circular economy, in a future where all waste is recycled. The emphasis should be on creating pure streams of waste at the household and business level rather than mixing and subsequent sorting which creates inefficiency. This may necessitate planning reforms to establish local circular economy infrastructure to receive product streams such as glass, dry cell batteries, food waste, garden organics, timber, plastics and more.

THEME 2: Water Security and Quality Challenges

The health of any riparian environment is dependent on maintaining structural conditions and water quality aspects to support riparian biodiversity and ecosystems.

It is well known that the health of streams from the Mount Lofty Ranges as they pass through agricultural and urban areas deteriorate towards a poor condition. For example, the Torrens River\(^3\) at Bonython Park is classified as ‘Poor’.

Whilst large rubbish can be removed through trash racks, other pollutants including chemical residues, particulates from roadways and sediment levels can prevent any riparian recovery.

River views sought by developers and buyers encroach on river and creek corridors.

\(^3\) See EPA Condition report Cards  https://www.epa.sa.gov.au/reports_water/c0278-ecosystem-2011
Opportunities

Sediment and particulates can be dramatically reduced through the use of WSUD at a local and precinct scale. Natural biofiltration systems can be integrated with management of urban stormwater to prevent road-to-river run off. This could be a principle applied to new development and urban renewal projects.

Preservation of wider river and creek corridors can achieve multiple benefits. Preserving the structural integrity of rivers and streams including the natural flood plain, backwater and billabong features can incorporate infrastructure for settlement and recycling of water and provide for biodiversity, and access to open space.

In established areas, such as along the River Torrens, there are opportunities for improving water quality where re-development projects are undertaken, as well as in Council initiatives such as the Felixstow Wetlands project.

The key is for the Planning and Design Code to prevent road-to-river pipes (such as the Mersey St to River Torrens discharge pipe installed in 2018) and encourage WSUD initiatives with detention wetlands and near natural flow pathways.

2.1 Mount Lofty Ranges Watershed Protection Area

As above

2.2. Other Watershed Protection Areas

As above

2.3 River Murray

As above

Suggestions on the proposed response (marked in in red)

<table>
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</table>
| 2.1 Mount Lofty Ranges Watershed Protection Area | From consultation to date with relevant councils and agencies, the following issues have been identified:  
• inconsistencies with referrals resulting from changes to non-complying forms of development across planning authorities  
• emerging land uses with similar impacts not being subject to the same requirements (e.g. breweries and cideries versus wineries) | Develop an Overlay across the MLRWPA based on the recent Mount Barker Watershed Overlay and apply consistently across all nine councils. This will include, where relevant:  
• adopting relevant policy amendments derived from the EPA’s ‘Hierarchy of acceptable effects’ to water run-off in the MLRWPA | Reform (Gen 1) |
### 2.2 Other Water Protection Areas

| 2B | Opportunity exists to consider the learnings from the recent Rural City of Murray Bridge Regional Integrated Water Management DPA in the development of a future overlay for all Prescribed Water Resources Areas under the Natural Resources Management Act 2004. This would help ensure the sustainable use of non-prescribed water resources. | Develop an Overlay to create consistent policy for the other water protection (Development Plan) zoned areas located outside the MLRWPA. | Reform (Gen 2) |
| 2C | Knowledge of the quantity and quality of non-prescribed water resources is limited, hindering their effective management and potential development. Ongoing research and monitoring is being undertaken by DEW in order to better understand the capacity of the resources and the potential impact of increased demand and changes in land use and climate. | Consider extending the spatial application of this Overlay to other water protection areas that are currently not captured in existing Development Plans. | Reform (Gen 2 and beyond) |

**Discussion Question: Should dams be assessed as development in the planning system?**

**Response:** Farm dams and other activities that may lead to the creation of permanent lakes (such as quarry lakes and pumped hydro-electric scheme lakes) should be addressed under the Planning system to ensure the adequacy of civil infrastructure, safety and related incidental works. The Natural Resource Management component may require referrals to the applicable government agency for water allocation, water quality and minimum low flow requirements, as well as any native vegetation clearance issues that should be referred to the Native Vegetation Council. These obligations could be managed through the Planning and Development process.
THEME 3: Biodiversity

The theme for biodiversity is only addressed briefly in the Discussion Paper. This issue will require a collaborative approach by professionals with a range of different skill sets to integrate the protection and enhancement of biodiversity within the Planning and Design Code. It should be acknowledged that habitat destruction has been the major driver of biodiversity decline and species loss, and that the decline continues even decades following habitat removal. Introduced pest plants, animals, pathogens, diseases, road kill and pollution also play a part in biodiversity decline and species loss.

Suggestions on the proposed response (marked in in red)

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<tbody>
<tr>
<td>3A</td>
<td>The transition to the Code creates an opportunity to refine policies in order to minimise different interpretations.</td>
<td>Review SAPPL policies in Coastal Areas, Infrastructure, Land Division (Design and Layout), Metropolitan Open Space System, Natural Resources, Open Space and Recreation and Siting and Visibility general modules and identify opportunities for refinement.</td>
<td>Transition ready</td>
</tr>
<tr>
<td>3B</td>
<td>There is an opportunity to reduce duplication of policy (currently in separate zones and general modules)</td>
<td>Consider one conservation zone, with spatial overlays (such as coast) that apply where required to trigger referrals and reflect state interests. It is unclear how this would work in practice. Currently, ecological and biodiversity aspects are not afforded protection in many/most situations.</td>
<td>Reform (Gen 1)</td>
</tr>
<tr>
<td>3C</td>
<td>There can be an issue at the interface between different land uses. For example, planting olives or vineyards in close proximity to the edge of a protected area. The transition to the Code presents an opportunity to incorporate policy that helps manage the interface between protected areas and adjoining land uses.</td>
<td>Strengthen policies for the interface between protected areas and adjoining land uses (from existing Natural Resources general module policy). AGREE, an approach to encourage complementary land uses should be encouraged.</td>
<td>Reform (Gen 1)</td>
</tr>
<tr>
<td>3D</td>
<td>The impact of adjacent land uses on biodiversity can be substantial. The development of the Code allows adjacent impacts to be considered at a consistent and appropriate level.</td>
<td>Ensure appropriate spatial application of policy (to land adjacent to nature protection areas). AGREE, this should also apply to the establishing/upgrading roads and transport corridors through and adjacent to Conservation Parks and ecological areas.</td>
<td>Reform (Gen 1)</td>
</tr>
</tbody>
</table>
It is important to delineate and maintain areas with significant environmental values; protect landscape health; preserve biodiversity; and improve development certainty and transparency. There is an opportunity to improve the associated mapping and incorporate it into future generations of the Code.

Develop policies and maps of the environmental and character values associated with specific nature protection and complementary developed areas.

The mission for Adelaide to be one of the most ecologically vibrant cities in the world will require a whole of landscape approach to protecting and enhancing remnant environmental assets. If the approach is limited to the best areas, the outcome won’t be possible.

A substantial amount of effort has been undertaken in the CFS and DEW to refer to and identify environmental assets, which can then be afforded tangible protection and enhancement strategies.

Discussion Question: Can the Code protect biodiversity in areas not identified as native vegetation and in modified landscapes with biodiversity values?

Response: To achieve the vision to be “the most ecologically vibrant city in the world” (David Speirs, NRM Policy, 2018) it will be necessary for the Planning and Design Code to establish a mechanism to protect biodiversity across metropolitan Adelaide, which is a modified landscape that still supports a moderate level of urban biodiversity. Biodiversity will decline rapidly where there is precinct scale loss of canopy and garden habitat, and where the sheltered connections between habitat (typically across and through residential backyards and front yards) could become blocked with ecologically barren development.

Protection of a limited number of “areas with significant environmental values” [environmental assets], is not sufficient as a strategy to halt the decline of species and ecosystems.

In urban environments it is not plausible that green infrastructure alone will support urban biodiversity. Substantial preservation of existing habitat in trees and gardens, habitat provided through public parks and waterways, plus the new green infrastructure associated with infill developments is required to collectively function as habitat and nature corridors. It would not be realistic to expect that a biodiversity rich park could exist when surrounded by a suburb void of natural habitat. Green Infrastructure can assist, but there also needs to be good habitat on private lands to maintain a moderate level of urban biodiversity.

Green Infrastructure for urban cooling and wellness can be ornamental in species selection, while Green Infrastructure for biodiversity has a much greater need for functional habitat structure, species mix and selection to be effective.

The Planning and Design Code could include policy requirements to ensure the following:
- HABITAT PROTECTION - Protection and enhancement of habitat wherever possible
- HABITAT CREATION – Minimum requirements and/or incentives for new development to incorporate biodiversity habitat, potentially including in natural soil and through green infrastructure side walls and roof areas
- CONNECTIVITY - Enhanced connectivity habitat wherever possible, to provide the opportunity for species and populations to move, adapt to changes, recolonise and recover.

Discussion Question: Can planning policy assess the cumulative impact of development on biodiversity?

Response: Planning policy can address cumulative impacts, however it needs to be incorporated in an equitable and transparent way to ensure the policies are not applied as a “first come first served” opportunity for the first wave of applicants. A Regional Plan should establish the potential impact on biodiversity within an area, based on the highest potential level of development which could result from the relevant zone and land use policies (e.g. density, allotment size etc). The Planning and Design Code policies should then establish development parameters which distribute the responsibility of sustainable practices amongst all potential development sites. The ePlanning system should then be able to track and collate these measures.

Ongoing monitoring and reporting is also important in protecting biodiversity from cumulative development impacts, particularly if offsets have been applied. The planning system should measure and report on biodiversity habitat losses and gains in rural and urban planning approvals. This can include:

1. Changes in habitat and green cover by development approval
   - reporting on the loss of Regulated Trees,
   - reporting on the loss of canopy and green cover (shrubs) by area
   - reporting on areas of habitat to be enhanced and/or re-established
   - ensuring that the data includes losses incidental to the initial approval footprint including the area of all bushfire asset protection zones to be established, access roads and tracks, asset protection for access roads and tracks and bushfire buffer zones

2. Changes in habitat and green cover by remote sensing
   There is an opportunity to streamline the data collection across government agencies and Councils for the efficient acquisition of near infrared RGB imagery for the Normalised Difference Vegetation Index (NDVI) which is a measure of vegetation health, plus day time and night time thermal heat.

3. Biodiversity Response
   This can be assessed through baseline and periodical re-assessments of urban species richness and abundance across a representative assessment points/precincts across metropolitan Adelaide. This could also incorporate citizen science and research collaboration.
4. Spatially monitoring Regulated Trees

The decline of the number of Regulated Trees across Adelaide in recent decades and the advancement in spatial platforms and data collection techniques (especially through smart phone applications) now means that it is feasible to map the remaining Regulated Trees in urban areas of metropolitan Adelaide. For the ePlanning system to appropriately call up relevant policies in the Assessment Table, all land parcels need to be linked to a trigger for any Regulated Trees on the subject site and adjoining sites. It is unclear how this task is being resourced ready for Generation 1 of the Planning and Design Code.

**Discussion Question:** Can planning policy play a role in protecting and encouraging backyard biodiversity?

**Response:** Yes.

However, without a clear policy, an effective mechanism/incentives and participation by the development sector, the planning system will not adequately protect backyard biodiversity. Without protection and incentives to ‘design around’ environmental assets, the connectivity between urban biodiversity populations will collapse followed by the loss of “islanded” populations and widespread regional decline.

New policy to be developed through the Planning and Design Code could be extended to include:

- A strengthened tree/vegetation assessment of a site during the development assessment, including an assessment of linkages to surrounding areas of biodiversity;
- Recommended species lists, such as native vegetation which provides cooling, contributes to biodiversity and habitat, while also being water efficient;
- Minimum dimensions and depths of soft landscaping areas (not just within Urban Corridor Zones), minimum planting requirements, minimum clearances between driveways and street trees etc; and
- Include urban heat mapping within overlays to identify ‘hot spots’ where planting should be prioritised

It is important that the new planning system places equal weight on private as well as public greening; the draft State Planning Policies, for example, were considered to place far too much emphasis on public greening and far too little emphasis on greening on private land. It is unclear how green canopy targets will be met with broad State level support for urban infill.

**Discussion Question:** Do we need a policy to protect and encourage development of roadside vegetation?

**Response:** Yes.

For urban areas, particularly where redevelopment is taking place, roadside vegetation is not only being lost but the opportunities for kerbside planting is reducing because of the increased crossovers. There is a need to communicate
the benefits that trees and roadside vegetation provide for communities (including for urban cooling, amenity and biodiversity), and support a more ‘design around’ planning and promote an integrated approach for biodiversity (e.g. Infrastructure Schemes). For larger scale developments, such as within Urban Corridor Zones, joint partnerships between developers and local governments/State government could be established to improve verge planting and road gardens within the public realm. This has multiple benefits including an improved amenity for future residents and businesses within the development, the public more generally, environmental benefits and provides assistance to local governments in particular given the increased emphasis on greening in the public realm within the State Planning Policies.

For outer urban, hills and rural areas where there are competing interests for road safety, fire management, protecting roadside vegetation and biodiversity, the policy challenge has not yet been tackled in an integrated way. There are competing Government and council approaches which continue to cause significant removal of roadside native vegetation sometimes for little benefit. Currently, the Native Vegetation Council have draft guidelines out for consultation on roadside vegetation management. Last year, there was consultation by a regional Bushfire Management Committee on this topic. There are dangers with a one size fits all approach and it is strongly recommended that there be an integrated solution that involves all key stakeholders.

**Car Park Vegetation**

Many councils have identified the opportunities to better utilise car parking space for multiple benefits. Solutions may include:

- The Planning and Design Code to require that car park developments provide adequate levels of canopy and green cover with greater requirement for developers to undertake landscaping; and
- Car parks should be treated like public open space and have higher amenity value that integrates these places into surrounding precincts and promote wider uses than just car parking including cycle and pedestrian access, increased shade cover, biodiversity benefits, WSUD and runoff treatments.
THEME 4: Coastal Environments

Challenges

The focus on coastal developments is extremely important in a changing climate with sea level rise increasing. With storm surge, subsidence and growth pressures at the coastal zone, the full range of socioeconomic and environmental factors must be taken into account. These include the need to provide for landward migration of coastal environments such as sand dunes, mangroves, mud flats and samphire ecosystems.

The planning system should also take into account that warmer conditions in still water environments such as mangroves and mud flats, will benefit mosquito and midge populations and likely cause greater impacts on local communities from diseases such as from Ross River virus, Murray Valley encephalitis and potentially Dengue fever.

Opportunities

New greenfield developments provide the opportunity to consider the plausible impacts of climate change over the planned life of a coastal development, noting that as sea level rise continues, coastal communities may have a finite life beyond which they become too costly to maintain.

Whilst preserving areas that are highly sensitive, have important features or provide high scenic quality is important, it is also important that there be good design to support functioning coastal ecosystems. This will necessitate adequate coastal reserves and set back distances that are ecologically adequate and take into account continuous sea level rise.

Providing greater allowances for storm surge and land based flooding coupled with storm surge can minimise risks for life and property whilst also providing coastal habitat and room for retreat.

There is also an opportunity for Good Design Principles as applied to coastal developments to incorporate habitat preservation and creation. For those developments near mosquito and midge producing environments there is opportunity to integrate habitat for small birds such as welcome swallows which consume their approximate weight per day, mostly of mosquitoes and midges – (See University of South Australia Research – requirements include habitat, sheltered nesting sites, water and mud). Such an approach may not reduce the volume of insects being produced, but can reduce the numbers of mosquitoes and midges within settlements where they come into contact with people.

Suggestions on the proposed response (marked in in red)

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<tr>
<td>4A</td>
<td>The transition to the Code creates an opportunity to refine policies in order to minimise different interpretations</td>
<td>Review and consolidate existing variations to Coastal Areas, Coastal Conservation, Coastal Open Space and Coastal Settlement SAPPL general and zone modules and ensure appropriate and consistent site and floor level requirements.</td>
<td>Transition ready</td>
</tr>
<tr>
<td>4B</td>
<td>There is an overlap between the ‘High Water Mark’ and ‘Low Water Mark’ in</td>
<td>Resolve the ‘High Water Mark’ and ‘Low Water Mark’ overlap between</td>
<td>Transition ready</td>
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</table>

No further comment
| 4C | Development Plans and there is an opportunity to deal with this as part of the transition to the Code. | Land Not Within A Council Area (Coastal Waters) and other Development Plans. No further comment | Reform (Gen 1) |
| 4D | There is an opportunity to make coastal policies more consistent by consolidating existing policies. This could be achieved by developing an overlay(s). Currently investigations are underway about whether to have one or more overlays. Using an overlay would also provide the necessary mechanism to trigger relevant referrals. | Develop a Coastal Areas Overlay (or two: one for metropolitan and one for non-metropolitan areas). No further comment | Reform (Gen 1) |
| 4E | The increasing impacts of climate change are reinforcing the need for policies to better protect, preserve and provide space for migration of coastal features and habitats adapting to sea level rise (e.g. the migration of dune systems and mangroves). | Ensure policy requires adequate consideration of climate change risks, including provision of space for migration of coastal features such as beaches, dunes and mangroves where appropriate. AGREED – the extent of space required will require specialist input form geomorphologists, applied climate scientists and ecologists. | Reform (Gen 1) |
| 4F | Existing policy needs to have more clarity about what land-use activities are envisioned for these areas. | Resolve policy to apply to Land Not Within A Council Area (Coastal Waters), including providing clearer guidance regarding envisaged uses (such as aquaculture, tourism and recreation). Include consideration of the impact of placing settlements near midge and mosquito habitat areas | Reform (Gen 1) |
| 4G | With rising sea levels, the risk of inundation increases. Therefore the spatial application of where this risk applies needs reviewing and updating. | Ensure policy requires soakage trenches associated with waste water disposal to be located appropriately in relation to potential inundation. | Reform (Gen 1) |
| 4H | There is potential to improve aquaculture policies, in particular in the area of waste water, buffer widths and on-shore support facilities. | Ensure appropriate policy for waste water, buffer widths and on-shore support facilities in aquaculture zones. | Reform (Gen 2) |
| | Climate change is likely to create increased hazard levels and therefore it will be important to ensure that mapping is regularly reviewed and updated. | Work with relevant parties to review and update hazard mapping in coastal areas. | Reform (Gen 2) |

**Discussion Question:** What level of development (including accommodation) is appropriate for a Coastal Conservation Zone?

**Response:** Coastal development planning should take the following factors into account:

- Biodiversity, the need for a continuous coastal zone to support coastal ecology including shorebirds, birds of prey, habitat, connectivity and local ecosystem importance.
The longer term benefits of developed versus undeveloped coastal zones (at High Water Level + 50 m up to 500m) for communities and the principles of people in parks.

**Discussion Question:** Does current planning policy adequately address the risk of new development from climate change impacts (coastal retreat, sea level rise and storm surges, etc.) for at-risk coastal settlements?

**Response:** It is understood that the current planning policy library for coastal development includes the following provision for climate change impacts:

- A physical allowance for sea level rise and subsidence for the first 100 years post establishment, for example:
  - (a) site levels are at least 0.3 metres above the standard sea flood risk level
  - (b) building floor levels are at least 0.55 metres above the standard sea flood risk level
  - (c) there are practical measures available to protect the development against an additional sea level rise of 0.7 metres, plus an allowance to accommodate land subsidence until the year 2100 at the site.

- A nominal 50 metre reserve width at the coastline.

Other factors should be considered including:

- The rate of sea level rise is increasing: 4
  - 2.5 millimetres per year in the 1990s,
  - 3.4 millimetres per year 2018,
  - Sea level rise at an increasing rate is modelled.

- 50 metres is unlikely to be of sufficient width to maintain functioning coastal ecosystems.

- 50 metres is unlikely to be sufficient to provide for landward migration of coastal ecosystems.

- A greater biodiversity context should be considered, for example, placing new human settlements too close to midge and mosquito breeding areas in mangrove and saltmarsh habitat will cause ongoing risk of insect borne diseases plus continuous use of pesticides in sensitive environments.

- How to design coastal developments to contribute to biodiversity.

- The impact of dogs and cats on vulnerable coastal biodiversity as a result of coastal development.

- Liquefaction risks in soft sediment locations

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4 See Climate-change–driven accelerated sea-level rise detected in the altimeter era
PNAS February 27, 2018 115 (9) 2022-2025; published ahead of print February 12, 2018 [https://doi.org/10.1073/pnas.171731211](https://doi.org/10.1073/pnas.171731211)
THEME 5: Natural Hazards

It is agreed that planning policy plays a key role in minimising the potential impact of hazards. It is important to minimise risk to people, property and the environment from exposure to hazards by designing and planning for development in accordance with the risk hierarchy to avoid risks (such as high risk locations) in preference to adapting to risks and changing the environment to reduce risks.

Development and Fire Risk Management
The current framework is not adequately following the risk policy with regard to bushfire risk, there are very few if any developments that have been prevented or relocated to avoid such risks. The current framework enables and approves development in the most high risk places followed by incidental native vegetation removal in order to create asset protection zones bushfire buffer zones, dual access roads which also require asset protection clearance with the end result being clearance many times greater than the original development application acknowledges. As this clearance is incidental to an approved development and deemed necessary for the protection of life and property against fire risk, there is no referral to the Native Vegetation Council.

The South Australian Planning Policy Library – Hazards Policy has historically provided guidance using the following ‘should’ statement.

“Buildings and structures should be located away from areas that pose an unacceptable bushfire risk as a result of one or more of the following:
(a) vegetation cover comprising trees and/or shrubs
(b) poor access
(c) rugged terrain
(d) inability to provide an adequate building protection zone
(e) inability to provide an adequate supply of water for fire fighting purposes”.

Such guidance has not stopped development (particularly single dwelling developments) in the most high risk locations.

It is understood that the CFS Development Assessment Service does not have the role or legal capacity to prohibit a development in an unsafe place, but rather provides advice on the building structures firefighting capacity (water sources etc.) and clearance required. The councils then provide approval based on the fact that CFS has provided advice on clearances. There is no full impact assessment based on the initial and subsequent incidental clearance that will be sought. There is also no assessment to consider the residual risk of natural hazards to developments in high risk locations once the bushfire asset protection zones, buffer zones and access roads have been established.

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<td>5A</td>
<td>Hazard policy needs to be reviewed, consolidated and best practice policy applied.</td>
<td>Consolidate and transition relevant SAPPL Hazards, Coastal Areas and Land Division general modules policy to the Code.</td>
<td>Reform (Gen 1)</td>
</tr>
</tbody>
</table>
The current policy dealing with bushfire hazard and development is not working adequately to protect people, property or the environment and requires a significant overhaul.

| 5B | Flooding mapping needs to be consistent across and within different jurisdictions (including the mapping methodology) and be linked with the new Code. Consistency of terminology for flood-related policy is also needed. Acid sulphate soil areas could be applied as an overlay (using mapped areas in existing Development Plans), subject to consistency of data. Bushfire mapping, methodology and possibly policy need updating (with reference to recent changes to Victorian and New South Wales policy). Introducing overlays will provide a mechanism to ensure hazard mapping is regularly kept up to date. | Review and refine the mapping of hazards in current development plans and transition into spatial layers with associated overlays, including:
• Mapped flood areas as a new Flood Risk Overlay
• a Bushfire Risk Overlay
• other hazards currently mapped such as coastal hazards and acid sulphate soils.
The overlay by itself does not reduce the risks of hazard exposure to people, property or the incidental impacts on environment. | Reform (Gen 1) |

| 5C | The Code provides an opportunity to review current hazard policy and update it with best practices where appropriate, including nuanced policy that reflects the level of risk. | Update flooding policy in the Hazards general module to reflect best practice policy where appropriate
A significant review of development practices in bushfire risk areas is required | Reform (Gen 1) |

| 5D | There is an opportunity to improve flood mapping by:
• updating the mapping of all flood-prone areas using a consistent methodology.
• Exploring the opportunity to create flood risk categories associated with overlays that take into account flood function as well as volume and depth. | Review the flood mapping data (not currently mapped in Development Plans) and update the Flood Risk Overlay. AGREED | Reform (Gen 2 and beyond) |

**Discussion Question:** How can we better integrate council-owned flood data with the new Code and achieve consistency?

**Response:**

This is an area for specialist input.

Many Councils have detailed floodplain maps and stormwater management plans mapped on their GIS systems. This data can be shared in the GIS based mapping system to be used in the Planning and Design Code. Floodplain mapping should ensure it takes into account climate projections identified in the various regional Climate Change Adaptation Plans. This information should be used to derive consistently expressed AHD levels and related FFL and site levels. These need to be included as assessment criteria for both deemed to satisfy and performance assessed development. Where flood mapping is not available or is out of date, a precautionary approach should be taken whereby development is performance assessed rather than assessed via a deemed to satisfy process.

Greater use of waterways, flood plains and creek based watercourse pathways can be utilised for open space and biodiversity, whilst preventing flood hazards.
Current planning policies relating to hazards do not include planning development around heatwaves. With these predicted to increase, this should be included in the Code particularly as urban heat mapping becomes more standardised across the state. Heatwave policies should align to local or regional vulnerability assessments incorporating urban heat island mapping and require developments to incorporate cooling functions, building materials and passive solar design that reduces heat wave impacts. Developments in high risk areas should indicate how proposed design mitigates the urban heat island effect.

Discussion Question: What climate change projections should be used? What time-frame and emission scenarios?

Response: Many councils are using the Intergovernmental Panel on Climate Change high growth/high emissions Representative Concentration Pathway (RCP8.5). This scenario is best aligned with current global human behaviour and is the most plausible, despite being unacceptable. The median impacts of this scenario are much higher compared to a lower emissions scenario but this does not make them less likely. The inertia of growth into the coming decades will also be difficult to change further reinforcing the RCP 8.5 outcome.

Discussion Question: Should flood risk categories be based on physical (depth and velocity) and function and isolation risk factors?

Response: This is an area for specialist input.

Development and Bushfire mitigation

Response: The CFS Development Assessment Service should be equipped with the authority to refuse land divisions that pose an unacceptable exposure to bushfire risk. Included in this authority should be a requirement to consider the immediate and subsequent (incidental) removal of native vegetation that might be cause by an approval including for access roads, asset protection zones and bushfire buffer zones.

For single dwelling approvals there should be a limit to the extent of incidental clearance of native vegetation (asset protection zones, access tracks and roadways, asset protection zones around access tracks and bushfire buffer zones). In places where it is unlikely that the risk of exposure can be mitigated to a safe level, then as a component of the development approval, the responsibility of establishing and practicing a bushfire survival plan must be identified to rest with the owner/occupier and such infrastructure should be regarded as replaceable. These dwellings should be vacated as necessary and particularly on extreme and catastrophic fire danger days.
THEME 6: Environment Protection and Environment Health

The focus of this theme is on pollution, being pollution to soil, water and air and managing noise pollution. Environmental Protection and Environmental Health theme could be more accurately described as: *Pollution and human health*. Environmental Protection embraces a much broader range of Natural resource management, biodiversity habitat and climate change mitigation in addition to pollution and human health.

It is agreed that the Planning Framework should address site contamination and noise pollution interface issues in a proactive way through planning, rather than trying to address these issues retrospectively.

Similarly, fuel burning activities such as the burning of forest pine residue burning, coal boilers and solid waste burning should be addressed in a proactive manner, and installations should be checked to ensure that the performance data is consistent or better than modelled data used for planning applications and approval.

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<tbody>
<tr>
<td>6.1 Site Contamination</td>
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<tr>
<td>6A</td>
<td>The transition to the Code creates an opportunity to refine policies in order to minimise different interpretations.</td>
<td>Review and transition relevant SAPPL site contamination policies to the Code. <strong>AGREED</strong></td>
<td>Transition ready</td>
</tr>
<tr>
<td>6B</td>
<td>There is currently a lack of policies for planners to use in assessment when no referral is triggered (e.g. it is known that there are a number of undiscovered contaminated sites so there is a need to have policies that trigger proper investigations when required).</td>
<td>Review and develop appropriate policy for planners to assess site contamination where no referral is required.</td>
<td>Reform (Gen 2)</td>
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6.2 Interface including noise and air emissions

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<tr>
<td>6C</td>
<td>There is an opportunity to review policies relating to interface, particularly in light of recent policy amendments and movement towards more mixed use zoning, e.g. residential areas alongside industry or commercial uses</td>
<td>Review and refine the SAPPL Interface Module as required. Consider a requirement for certain activities associated with noise pollution to require development approval, such as private trail bike circuits)</td>
<td>Transition ready</td>
</tr>
</tbody>
</table>

Discussion question: *Should cumulative noise impact assessments be undertaken as part of the development assessment process?*

Response: Yes

Cumulative noise impact modelling should be undertaken prior to rezoning to establish what zone policies may be required to mitigate noise impacts on sensitive...
uses which are either located within the zone (i.e. for mixed use zones) or in adjacent zones.

Certain activities should require development approval to be undertaken. For example, the establishment of trail bike motorcycle circuits on private lands can lead to regular annoyance and distress for surrounding landholders. These can include dedicated features such as corners and jumps that are used repeatedly. Where an activity is likely to become a regular occurrence (for example, more than three days per year), then development approval should be sought.

Discussion question: How can policy effectively address the interface between land uses in zones promoting mixed land uses? For example, a coffee roaster adjacent to a residential development in an urban corridor.

Response: Separation distance between incompatible or sensitive land uses needs to remain as an important practical planning tool in the Planning and Design Code. The Code should ensure appropriate levels of assessment of development in interface locations by designated most forms of development as Performance Assessed with a comprehensive suite of policy considerations relating to design and appearance, noise impacts, operation impacts (including hours and levels of activity), traffic generation, car parking etc. Administrative procedures should also ensure appropriate public notification and designation of scale and function thresholds beyond which triggers Restricted Development category under the Code. The collaborative development of Regional Plans and Subregional Plans is an important step, missing from the current planning reforms process, which can be used to strategically locate (and if necessary separate) different zones and associated land uses.

There should be some regard for the complementarity of adjacent land uses. For example, a residential urban development at the boundary of a conservation park causes the need for asset protection zones and bushfire buffer zones and prescription burning to keep the land division safe. However, if there was an open space corridor (low fuel and green) provided as part of the development, then this can meet the community needs and protect the biodiversity in the conservation park.
Conclusion
In conclusion, the Resilient East Steering Committee considers that the State Planning Reforms and Planning Design Code will play a critical role in transitioning South Australia to climate ready and sustainable transport solutions.

A transformational approach is required through the planning system for development and infrastructure to have a positive benefit for environment and natural resources management. This will require better integration of policies and key checkpoints, assurance mechanisms a targeted combination of Planning and Design Code requirements and incentives to collectively influence the built form to be greener, healthier and more climate resilient.

The Resilient East Steering Committee is would be pleased to discuss this submission with the relevant Planning reform Team representatives.

Yours sincerely

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