# Steep Creeks

DRAFT

**Definition + importance**

- Gullies and steep creeks with ephemeral watercourses host a diverse range of grasslands including, herbs, forbs and some shrub species or Mallee Box grassy woodland with understorey species which supports numerous remnant fauna species. These areas provide an opportunity to integrate natural corridors within new areas of Gawler, cutting their way through the hills to the plains.

**Key Considerations**

- **Low maintenance to high biodiversity -** The forecast expansion in subdivision and development of the land parcels which the steep creek lines and rivers dissect must ensure that works within these corridors are conducted to maintain and improve their function and reduce Council's and resident's liability for significant ongoing maintenance and fire hazards. Prior to the vesting of land to Council, Council may request the land be an acceptable standard which meets one objective: the site achieves a desirable level of native biodiversity that is self-sustainable, or sustainable with the least possible human intervention. Council require the land is re-vegetated in accordance with Addendum 01 of Councils Standards and Requirements for Land Development / Land Division Guideline and consistent with any Action Plans outlined in the Gawler Biodiversity Management Plan.
- **Staging of Works -** New land developments have the opportunity to stage the restoration of steep creek lines and gullies. Staging of works is to be consulted and agreed upon with Council.
- **Erosion -** Current erodibility studies outline potential high erosion on certain sites, in particular Gawler East watercourses, refer to the Surrounds Stormwater Management Plan.
- **Environmental sensitivity -** Steep creeks and gullies are of high importance and all infrastructure works in creeks is to be minimised where possible. Steep creeks and gully environments are treated to protect native flora and fauna, with stormwater detention infrastructure to be located outside of watercourses and steep creek environments.

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Gawler

# Steep Creeks

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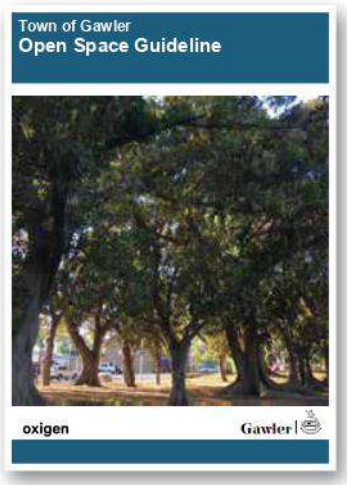
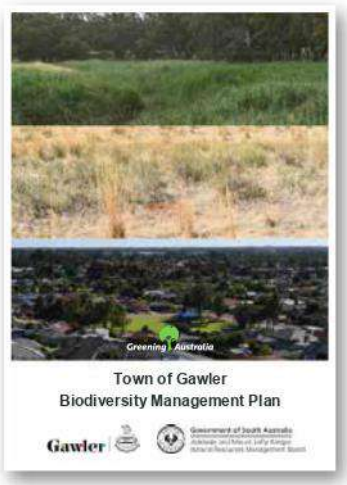
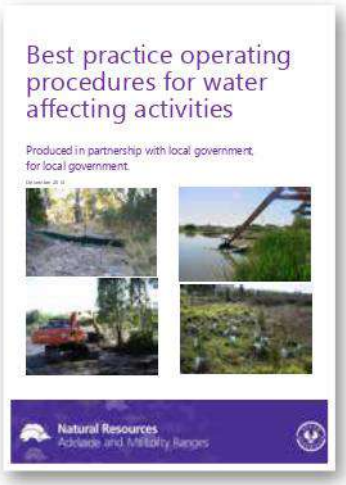



*Open Space Guideline*




*Biodiversity Management Plan*




*Best Practice operating procedures for water affecting activities*

**Maintenance Guidelines**

- Generally non-irrigated, all areas to be maintained to a safe and appealing standard.
- Reduction of maintenance and management requirements through appropriate plant and material selection and appropriate maintenance procedures. The Biodiversity Management Plan can be referred to for further information.
- Any structures or amenities such as picnic, playspaces, seating, shelters and pathways to be maintained to a safe and appealing standard and in accordance with Australian Standards.

**Documents to reference**

- Refer to the Town of Gawler Biodiversity Management Plan and Gawler and Surrounds Stormwater Management Plan for further detailed input into biodiversity restoration and stormwater detention areas in the future.
- Refer to the Natural Resources Adelaide and Mount Lofty Ranges for further information best practice and procedures within close proximity to water courses.
- Refer to the Gawler Open Space Guideline for a series of guidelines to maintenance of steep creeks and gullies.

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# Bond Agreements & Infrastructure Agreements

DRAFT

*Orleana Waters Development*

**What is a Bond Agreement?**

- The bond is a guarantee to the terms of a contract are fulfilled. If the contracted party fails to fulfill its duties according to the agreed upon terms, Council can claim against the bond to recover financial losses or a stated default provision.
- A bond will protect against disruptions or unlikely events during a construction project. Through construction this will protect Council from any suppliers that fail to complete their work or if the project fails to meet the contract's specifications.
- Council will accept bonds in the form of bank guarantees to complete the works that are given. The bonds are not released or reduced until the works are completed, to the reasonable satisfaction of Council. If the developer defaults on any conditions, bonds shall be retained by Council to cover construction / maintenance / defects liability of works.

**What is a Bank Guarantee?**

- A Bank Guarantee is an alternative to providing a cash deposit or bond directly to Council. It is an unconditional undertaking given by the bank, on behalf of the developer, to pay the recipient of the guarantee the amount of the guarantee on written demand.
- Bank Guarantees require security in the form of cash held on deposit with the bank.

**Infrastructure Agreement**

- When the developer is required to undertake works to facilitate the construction of the development that are external to the site or not covered in the development plan then they must enter into an infrastructure agreement for the works.

- An agreement (i.e. Infrastructure Fund) can be entered between a developer and the Council to cover the ongoing operational and maintenance costs associated in new land developments that may include non-conventional landscape works.

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# Bond Agreements & Infrastructure Agreements

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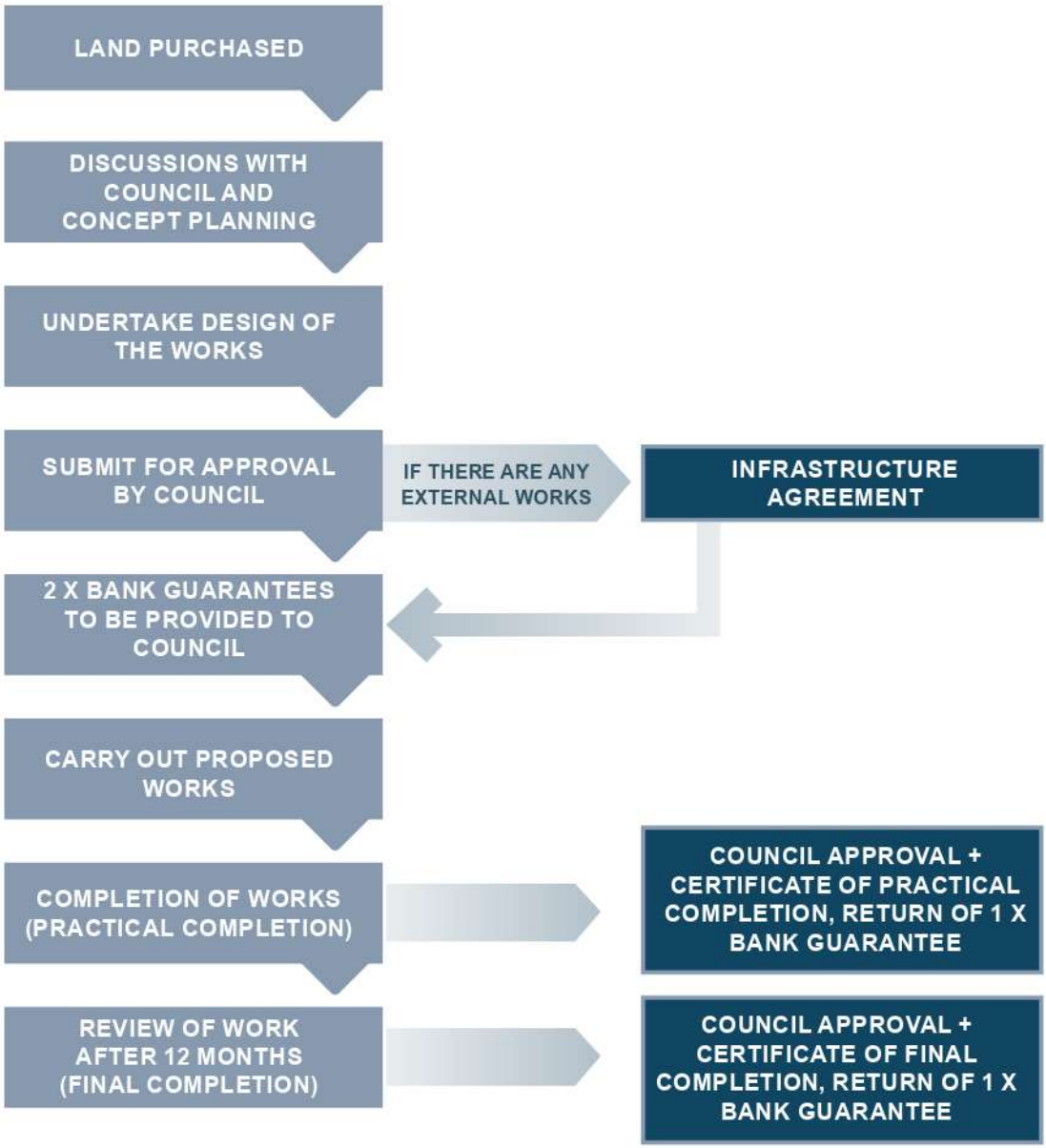
**Process**

- The following diagram summarises the process required for developers to obtain planning consent, approval for planning / construction and final sign off by Council.

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DRAFT

# Open Space Checklist Approvals and Handover

| ITEM | TOWN OF GAWLER | DEVELOPER / CONSULTANT |
|---|---|---|
| **PLANNING PHASE** | | |
| Open Space Guideline + Public Realm Design Manual provided to developer and consultants. | Issue Documents | - |
| Level, type and percentage / area of Open Space identified and confirmed with Town of Gawler. All current and future connections identified and integrated where possible. | Initial briefing meeting | Initial briefing meeting |
| Proposed public realm reviewed and checked against Open Space Guideline requirements. Any non-conforming elements must have written approval from the ToG prior to proceeding. | Initial endorsement to proceed with detailed design | Developer to confirm that public realm complies with the Guidelines and Manual |
| Formal submission of the proposed public realm design for approval by Town of Gawler, including details of proposed:<br>— tree and plant species<br>— verges and maintenance<br>— materials and furniture selections<br>— irrigation and extent | Review and formal approval | Submit all required documentation |
| **CONSTRUCTION PHASE** | | |
| Pre-Commencement Site Meeting | Approval to commence site works | Submit all project plans and programs |
| Irrigation | Review + hold point | Provide certified ITP's |
| Trees | Review + hold point | Provide certified ITP's |
| Plants | Review + hold point | Provide certified ITP's |
| Pavement | Review + hold point | Provide certified ITP's |
| Furniture, Lighting + Play equipment | Review + hold point | Provide certified ITP's |
| **HANDOVER PHASE** | | |
| Prctical Completion | Quality inspection and any quality issues identified | Provide all as-built and handover documentation 2 weeks in advance of walkover. Must include landscape / civil certification that all works are in accordance with the specification and ToG requirements |
| *For new developments, developers will maintain care and control of open space areas up until the development achieves 80% settlement or 12 month post practical completion as a minimum.* | Issue of Council Practical Completion Certificate | Rectify issues identified |
| Maintenance period | Review of Reports to ensure compliance | Provide monthly reports for reveiw |
| Final completion | Quality inspection and any maintenance issues identified<br><br>Issue of Council Final Completion Certificate | Rectify issues identified |

Gawler

## 7. Section D – Project Brief

A. Prior to signing of the Professional Services Agreement the preferred tenderer will be required to provide Job Safety Analysis/Safe Work Method Statements/WHS Management Plan for the proposed works to be undertaken. These Job Safety Analysis/Safe Work Method Statements/WHS Management Plan will be assessed as part of the tender evaluation criteria and Council reserves the right not to award the contract to the preferred tenderer based on the assessment outcome.

Risk assessment documentation needs to be provided from the contract as per the following table:-

| Project value / type | Requirements |
|---|---|
| Less than $250,000 | Risk assessment / JSA |
| High risk construction work (less than $250,000) | SWMS |
| $250,000 or more (becomes a construction project) | WHS management plan (includes risk assessments/JSAs or SWMS) |
| High risk construction work ($250,000 or more – is a construction project ) | SWMS + WHS management plan |

B. Services. The following services are required.

### 7.1 Background

The Town of Gawler has and will continue receive a number of new open spaces from land development over coming years as a growth Council. Professional Services are requested to deliver Town of Gawler Open Space Guideline. The Council receives a number of development applications relating to land divisions each year and is a significant growth area for the region. To assist in managing this growth, an Open Space Guideline will assist Council, developers and their consultants to plan and design open space areas in an orderly and sustainable manner.

The aim of the project is to develop standards and requirements for delivery of open space areas in the Town of Gawler outlining the development levels of service expected by the Council for the provision of public open space that will be vested to the Council.

**Key objectives of the Open Space Guideline include:**

- Communicate strategic planning principles associated with provision of open space areas
- Provide reference to relevant legislation, Council Policies and linkage to Strategic Plans
- Assist developers with the master planning and concept design of open space in relation to new land developments within the Town of Gawler
- Communicate the principles of best industry practice in landscape design and function
- Define different categories of open space areas
- Benchmark and establish levels of service or standards for key features in each category of open space
- Provide guidance for the management strategies of streetscapes, steep creeks and verges
- Clearly communicate with graphic representation and practical examples, where necessary

The Guideline will need to consider and build on the Town of Gawler Open Space, Sport and Recreation Plan 2025. The Open Space, Sport and Recreation Plan allocates categories and hierarchy to existing open spaces and provides a hierarchy and category framework as well as an understanding of future community needs. In addition, the Guideline should be consistent with Council's Asset Management Plan and give consideration to the capital and operational costs associated with new assets.

A number of Development and Design Guidelines have been developed by other Local Councils including but not limited to:

- The City of Onkaparinga Parks and Reserves Style Guide
- Principles in the Holdfast Bay Open Space Asset Management Plan – key features for reserve categories
- City of Swan Landscape Guidelines for Streetscapes and Open Space
- The District Council of Mount Barker Open Space Recreation and Public Realm Strategy
- City of Salisbury Landscape Plan

These and other guidelines should be considered when developing the Open Space Design Guideline for the Town of Gawler. In addition, consideration should be given to industry benchmarks, standards and design frameworks that will add value to the Council's Guideline.

### 7.2 Scope of Works

1. Undertake a desktop review of relevant legislation, Council Policies, publications by the Local Government Association and other industry open space guidelines.
2. Provide Draft Open Space Design Guideline building upon the Methodology outlined in this request for tender.
3. Meeting with Councils project manager and internal staff seeking input into development of the Open Space Design Guideline.
4. Presentation to Elected Members of updated Open Space Design Guideline following consultation with Council staff (as per item 3).
5. Public and Stakeholder consultation (e.g. local developers)
6. Provide a final version of the Open Space Design Guideline addressing feedback received from Council staff and Elected Members.

### 7.3 Methodology

It should be noted that Council has obtained recent legal advice pertaining to the relevant legislative provisions pertaining to open space provision and maintenance. This information will be provided to the consultant as will other relevant Council documents / reports.

The Guideline is required to be presented in a number of section as detailed to include;

**1. Introduction**

Brief introduction to the context and purpose of the Open Space Design Guideline and should include but not be limited to the following;

- Reference to the LGA Public Realm Urban Design Guidelines and other guidelines, define why open space is important, benefits to the community and align with the Town of Gawler Community Plan and Development Plan objectives.
- Brief background of growth statistics in Gawler region and reference to the 30 year plan for Greater Adelaide.
- List relevant Legislation and Council Policies and references for Open Space, Asset Management and watercourse management.
- Cross reference to Council's Standards and Requirements for Land Development / Land Division Guideline.

**2. Open Space Planning and Provision**

Such matters that should be considered but not limited to;

- Reference to the existing Gawler Open Space Sport and Recreation Plan for strategic guidance in open space planning and provision.
- Outline strategic planning principles associated with the provision of open space in existing communities and new land developments. This includes existing open space supply, open space sizes for the catchment, open space provision gap analysis, as well as distance for walking in catchments to various open space types.
- Provide definitions for Public Open Space, Active Open Space and Passive Open Space
- Define Open Space Contribution requirements as relates to 'usability', the provision of active open space (i.e. primary open space) and passive open space (i.e. secondary open space) in new land developments. Explain Councils obligations to accept land, in particular land that may not be considered appropriate for the intended function (i.e. is encumbered by easements for services infrastructure, flooding or other physical aspects that impact on the intended land use as active or passive open space.).
- Explain differences between Land Capability and Land Suitability. Other aspects that should be considered for the planning of open space include land capability and land suitability analysis as relates to proposed active and passive open space areas and uses.
- Consideration of environmental aspects such as erodibility, biodiversity and conservation management, cultural and heritage aspects etc.
- General guidance on planning principles relating to Greenfields site development and proximity to existing open space areas (i.e. ped sheds and distance between local parks, and neighbourhood parks and sporting ovals). Review and advise with respect to Development Plan policy.
- Importance of integration and achieving equity with existing reserve areas in Gawler. Some existing areas adjacent the new development areas have previously been identified as being deficient in open space of a certain type. Consider the planning of open space in new development areas in the context of a current lack of open space in some existing areas of Gawler to maximise the benefit to the overall community in the catchment it services.
- Develop an Active Open Space offsetting tool to assist in the determination of active open space against passive open space provision.
- Address the provision, role and function of open space areas in low, medium and high density residential areas.

**3. Open Space Design and Function**

Such matters that should be considered but not limited to;

- Discuss the best industry practice principles of open space design and landscape architecture design (i.e. CPTED, shade, linkages, vegetation sustainability in South Australian context and climate change into the future etc.).
- Discuss nature play, child friendly, disability access, and potential use of public art in open space areas.
- Design standards should be provided for recreational facilities and structures and play spaces (nature play and all abilities play), multi-use and shared use open spaces and facilities, integration with stormwater management, the connection of open space to communities.
- Location of open space areas and consideration to access, pedestrian – road – cycle connections, connection to residents/dwellings in catchment, passive surveillance, walkable catchments).
- Durability versus High Quality key features. Use graphical examples.
- Define in tabular format all categories of open space (regional reserve, neighbourhood reserve, local reserve, linear reserve, operational reserve, sportsfield, stormwater basin, wetland etc.) and typical size, features, range for each category.

Main outcomes to be achieved:

- Discuss the importance of 'Whole of Life' financial considerations for design of open space areas and infrastructure assets.
- Benchmark Level of Service or Standard for each reserve category in terms of key features.
- Assign a Level of Service or Standard to each of the reserve categories in terms of key features (i.e. no. of bins, no. of seats, percentage of irrigated turf, playground, bbq's, shelters, fencing, lighting, seating, toilets, youth facilities, smart cities, pathways, public art etc.).
- Define maintenance categories A to E in accordance with LGA Public Realm Urban Design Guidelines and Council operations and outline these are to be considered when assigning key features to different categories of open space. Use graphical examples.

**Other General Design Principles should include:**

- Water Sensitive Urban Design and Integrated Water Management
- Crime Prevention Through Environmental Design
- Safety – lighting, paths
- Use of technology within open space (e.g. Wi-Fi, QR Codes)
- Public Art
- Signage and Wayfinding
  - Incorporation of public art
- Access and Inclusion – DDA Standards
- Universal Design and Universal Access principles
- Heritage (Kaurna and European) and Themed Spaces with their surroundings
- Impact of Climate Change
- Urban Agriculture
- Community Gardens
- Adult involvement in activities, for example:
  - Outdoor Fitness Equipment
  - Table Tennis/Chess
- Environmental Sustainability principles

For example purposes only, refer Provision Table for tabular format outlined above:

| Open Space Type | Open Space Category | Level of Service | Example Design Drawing |
|---|---|---|---|
| Active (Recreational) | Sporting Ground | As agreed with Council | N/A |
| | Neighbourhood | 1 x playground with softfall<br>1 x bbq<br>2 x tables with seating<br>1 x shelter<br>2 x bins<br>Irrigated turf to not exceed specified percentage (or a stated sq m area) of category area<br>Irrigated gardens beds to not exceed 5% of category area (or not to exceed a stated sqm)<br>Native trees are preferred over other tree types to provide shade / habitat.<br>Native grassland species only in remainder of area<br>Nature play and child friendly design is encouraged | Refer Appendix (A) of Open Space Guideline |
| | Local Park Changes as for N. above | 1 x playground with Softfall (in negotiation with Council)<br>1 x bin<br>1 x public seating<br>Irrigated turf to not exceed 20% of category area<br>Irrigated gardens beds to not exceed 5% of category area<br>Native trees are preferred over other tree types to provide shade / habitat.<br>Native grasses only in remainder of area<br>Nature play and child friendly design is encouraged | Refer Appendix (A) of Open Space Guideline |
| Passive (Recreational) | Steep Creek and related Environments | Restoration and revegetation in accordance with management strategies outlined in the Open Space Guideline | Refer Appendix A of Open Space Guideline |

**Public Safety in Open Space**

- Reference to relevant industry guidelines for public safety around water bodies including but not limited to Stormwater and Open Space Integration by Water By Design and the Royal Surf Life Saving Association of Australia guidelines and LGA publications.
- Outline the hazards identification and risk based assessment framework for appropriate design features to reduce or mitigate identified risks to the public
- Water body design principles for public safety
- Benefits of lighting in certain locations and passive surveillance for public safety
- Use of signage for hazards and dry zones
- Other public safety matters – events

**Infrastructure Planning**

- Provide options for higher service level landscape outcomes, including benefits / issues with each (i.e. community title, separate rate, negotiated developer funded maintenance period etc.)

**Roadside Verge Fact Sheet (Present as a Factsheet in an Appendix of the Guideline)**

- Outline Council's role to the community associated with roadside verges.
- Develop with Council a standard of verge treatments for new land developments (i.e. compacted rubble)
- Propose a list of verge treatments that are considered acceptable and not acceptable to the Council in front of residential dwelling, adjacent various road reserves (i.e. down the side of a dwelling or not adjacent a dwelling or park), adjacent parks, and the parameters which are appropriate for road safety consistent with Council Policy 7.7. Visual diagrams are required.
- Detail process for verge improvement works by residents.
- Reference rural roadside treatments from the Town of Gawler Biodiversity Management Plan. This plan is expected to be available in 2018.
- Reference Council's approved Street Tree Species and Approved Planting Standard and Street Tree Policy

**Steep Creeks Management Fact Sheet (Present as a Factsheet in an Appendix of the Guideline)**

- Identify the importance of creeklines and desire to minimise infrastructure works in creeks.
- Include a definition of steep creek and definition of watercourse by the Natural Resources Adelaide and Mount Lofty Ranges
- Explain the Town of Gawler Biodiversity Management Plan and Gawler and Surrounds Stormwater Management Plan will provide more detailed input into biodiversity restoration and stormwater detention areas in the future.
- Include steep creek key management strategies from the Town of Gawler Biodiversity Management Plan that apply to various categories of open space areas and environments.
- Highlight the general principle of low maintenance high biodiversity outcomes are desirable in the development of steep creek lines and gullies in new land developments.
- Prior to the vesting of land to the Council, particularly passive open space, outline Council require the land is revegetated in accordance with Addendum 01 of Councils Standards and Requirements for Land Development / Land Division Guideline and consistent with any Action Plans outlined in the Gawler Biodiversity Management Plan.
- Outline in new land developments there may be an opportunity for developers to stage the restoration of steep creek lines and gullies. Particular focus on bringing forward such works as and where possible.
- Reference to erodibility study outlining high erosion potential sites for Gawler East watercourses undertaken as part of the Gawler and Surrounds Stormwater Management Plan.
- Infrastructure works undertaken by developers in steep creeks are to be limited to the maximum extent possible to preserve existing native vegetation and biodiversity in the area.
- These environments are to be treated as environmentally sensitive to protect native flora and fauna, with stormwater detention infrastructure located outside of watercourses and steep creek environments.

<u>General Information to be compared against the key management strategies of the Biodiversity Management Plan</u>

- Steep creek lines management strategies including restoration of the biodiversity qualities of these steep areas, prior to Council taking ownership to minimise ongoing maintenance costs, are required.

**Bond Agreements and Infrastructure Agreements Fact Sheet (Present as a Factsheet in an Appendix of the Guideline)**

- General introduction to process on how land is vested in Council from the developer.
- Explain what a Bond Agreement is (i.e. private land to then create public infrastructure) and what an Infrastructure Agreement is (i.e. external works and high risk works) and how they are used to support land development.
- Explain what a bank guarantee is and how it is separate to the Bond or Bond Agreement.
- Consider potential for an agreement (i.e. infrastructure fund) to be entered into between developers and the Council to cover the ongoing operational and maintenance costs associated with non-conventional landscape works in new land developments. Provide examples and options for developers to consider (i.e. Separate Rate, Section 221 Permit, Community Title approach to public areas, other).
- Detail process for non-conventional landscape works to be considered and key infrastructure required for decision making.

## 7.4 Deliverables

The following are required to be delivered for this project:

1. A first draft version of the Open Space Guideline with associated Fact Sheets for Council staff to provide feedback (indicative completion date:- **30/03/17**).
2. An updated draft version of the Open Space Guideline and Fact Sheets for Council Elected Members to provide feedback (indicative completion date:- **13/04/17**).
3. Public and Stakeholder consultation (e.g. local developers) (indicative completion date:-**11/05/17**).
4. A final version of the Open Space Guideline (indicative completion date:- **25/05/17**).

STATE PLANNING COMMISSION

# NATURAL RESOURCES AND ENVIRONMENT

## POLICY DISCUSSION PAPER

August 2018

Government of South Australia
Department of Planning, Transport and Infrastructure

saplanningcommission.sa.gov.au

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- Melissa Bradley, Program Manager, Water Sensitive SA
- Dr Stephen Forbes, leading botanist, horticulturist and writer
- Statutory Planning Reform Committees (Local Government, Development Industry and Community Participation and Sustainability)
- Industry Liaison Group
- Department of Environment and Water
- Environment Protection Authority
- Department of Health and Wellbeing
- Primary Industries and Regions SA
- Coast Protection Board
- Green Building Council of Australia
- Local government, agency, industry and community attendees of the State Planning Commission workshop held on 17 May 2018

We look forward to receiving further contributions as we move into the consultation phase of this paper.

**Further Information**

For a full description of the key research and investigations, evidence, facts, figures and references that support the statements and recommendations contained within this Policy Discussion Paper, please refer to the *Natural Resources and Environment Background Paper*. A copy of the paper can be downloaded from the SA Planning Portal.

Photos used throughout this document are courtesy of the Department of Planning, Transport and Infrastructure, the South Australian Tourism Commission, Renewal SA, Water Sensitive SA and City of Adelaide and professional photographers contracted to these organisations.

Natural Resources and Environment Policy Discussion Paper
State Planning Commission
August 2018
ONLINE: 978-0-7590-0291-3

# TABLE OF CONTENTS

## A future vision for our natural resources and environment.

Our vision is to support an urban form that is more efficient, liveable and resilient to a changing climate and helps to preserve the ecosystems that help safeguard the prosperity, vitality and sustainability of our state. We acknowledge that many South Australians value the relationship they have with our natural environments. Whether it be their ability to live in close proximity to our pristine coastline, along the River Murray or amongst the trees in the Adelaide Hills, or working to produce our globally renowned food and wine, we value the opportunities and lifestyle this state provides.

# INTRODUCTION

Land-use planning and development in South Australia is changing. In response to these changes, the *Planning, Development and Infrastructure Act 2016* (the Act) is being progressively introduced to replace the Development Act 1993 to enable a more efficient, responsive and effective planning system. The new system will support and enhance the state's liveability and prosperity in ways that are ecologically sustainable and meet the needs and expectations, and reflect the diversity, of its communities.

The Act provides for the creation of the Planning and Design Code (the Code) – a single planning rulebook for assessing all development applications across the state – that will become the foundation of our new planning system. The Code will replace the complex and at times inconsistent planning rules found within the 72 Development Plans currently in use.

In establishing the Code, we have been presented with an opportunity to harness those aspects of our current system that are working well and use them to form the foundation for the future.

Generally, we are doing a pretty good job of it, although there is always room for improvement.

The South Australian Planning Policy Library (SAPPL) has provided us with an excellent base from which to begin and we recognise that many councils and communities have a strong sense of ownership over policies that apply to their area.

However, we are aware the Code also presents us with the opportunity to improve and streamline areas where our current policies aren't quite up to scratch – where there may be conflict, duplication or deficiencies – and to develop new policies where gaps exist.

This needs to be done with the understanding that we may not be able to tackle all these issues in the first generation of the Code, which will be operational by July 2020. However, this process allows us to start a series of conversations with the industry and the South Australian public about the kind of future we want. This will enable us to provide effective planning to help realise these aspirations while proactively addressing the challenges we will face along the way.

In doing this, it is also important to recognise that planning is just one element of a much bigger system that works together to create liveable, competitive and sustainable places and spaces. Other levers outside the planning system also need to be pulled to achieve success and we must recognise their relationship to the development of the Code and its policy content.

At its heart, planning plays a significant role in balancing competing priorities and resolving tensions across these areas, in order to realise what our communities want when it comes to how we live, how we move about, where we work and how we protect our environment.

To this end, this paper focuses on the key issues and opportunities associated with protecting and enhancing South Australia's natural assets as we move into our new planning system. In particular, it focuses on the role our system can play in reducing the risks from natural and man-made disasters as well as preserving and protecting our natural assets and fertile lands from the encroachment of inappropriate development, particularly in the face of rising urbanisation and climate change.

We look forward to hearing your views on the recommendations we've put forward in this paper as well as continuing to work together to build a successful new planning system we can all be proud of.

# PURPOSE

In March 2018 the State Planning Commission (the Commission) released its *Blueprint for South Australia's Planning and Design Code* (Figure 1), which introduced:

- A series of policy discussion papers designed to stimulate thought around the policy direction for the Code
- A series of technical discussion papers to establish the operational framework and content requirements for the Code. The first technical paper – *Planning and Design Code: How will it work?* – is now available on the SA Planning Portal.
- A series of key policy conversations the Commission would like to have with the industry and the community in relation to those areas it anticipates will require a greater level of reform. Each Policy Discussion Paper will be closely aligned to at least one of these dedicated Conversation Areas.

In the case of this paper, the associated conversation will focus on **Green Infrastructure, Water Sensitive SA and Environmental Resilience**.

This Natural Resources and Environment Policy Discussion Paper is one of a series of four papers that explore land use policies in South Australia. The other papers consider:

- Integrated Movement Systems
- People and Neighbourhoods
- Productive Economy.

*(Refer to Figure 2)*


**Figure 1:** The Introductory Paper can be downloaded from the SA Planning Portal at: **www.saplanningportal.sa.gov.au**

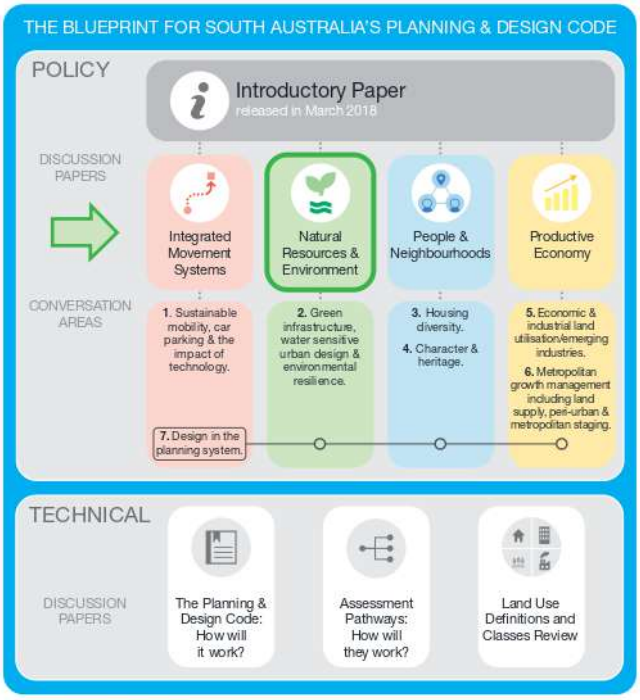


**Figure 2:** Context of this discussion paper against elements of the Blueprint.

The Policy Discussion Papers are intended to be read and considered as a 'family' and will assist the Commission to establish the planning rules that will ultimately govern our new system. Each has been developed through an extensive investigation and peer review process which has incorporated the following:

- a review of the South Australian Planning Policy Library (SAPPL)
- investigation of case studies and best practice policy examples from Australia and the world
- workshops with state agencies, councils and special interest groups
- Commission-led policy workshops
- a review of South Australia's Development Plans in partnership with local government
- a peer review process with thought leaders and key stakeholders such as planning reform advisory groups and government agencies.

This discussion paper draws on the results of these investigations to:

- highlight key emerging trends that may require a planning policy response
- identify gaps or deficiencies in existing policies of the SAPPL that need to be addressed to ensure alignment with government strategic directions (such as State Planning Policies). (See Figure 3)
- identify opportunities to consolidate duplicated policy
- highlight investigations and research undertaken or identified to inform proposed policy directions.

Ultimately, this intent of this paper is to recommend policy directions for the Code, including identifying:

- where existing policy is likely to be transitioned to the Code ('Transition ready')
- areas where further investigations or reform are necessary ('Reform Gen 1 or Reform Gen 2 and beyond').

These recommendations are offered in line with the following policy themes which play a key in the protection and enhancement of our natural resources and environment in our new system:

- Sustainable and Liveable Urban Environments
- Water Security and Quality
- Biodiversity
- Coastal Environments
- Natural Hazards
- Environment Protection and Public Health.

To access this full evidence base on which is discussion paper has been written, please view the supporting **Natural Resources and Environment Background Paper**.

In recognition of the importance of collaboration in building a successful new planning system, discussion questions have been included as a means to promote thought and seek guidance on the policy recommendations contained within this paper. Please consider them when providing any feedback.

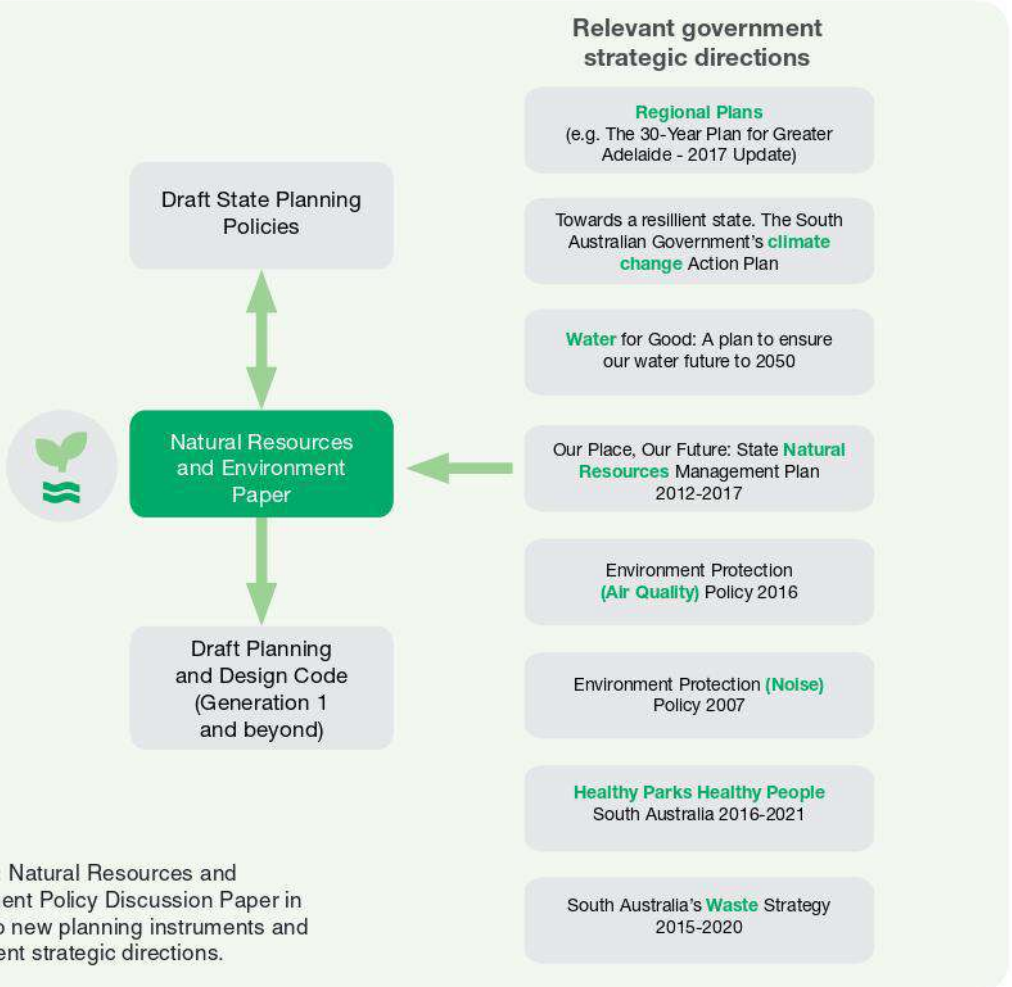


**Figure 3:** Natural Resources and Environment Policy Discussion Paper in relation to new planning instruments and government strategic directions.

NOTES:

*The draft State Planning Policies are on consultation from 16 July to 7 September 2018.*

The State Planning Commission is mindful of the recent change of Government, and that current strategic directions may evolve as the new Government continues to progress its agenda.

# WHY ARE NATURAL RESOURCES AND THE ENVIRONMENT IMPORTANT?

Natural resources and the environment underpin South Australia's economic prosperity and social wellbeing. They provide us with water, food, fuel and fibre, and support industries and communities as well as our quality of life. They are also responsible for climate regulation; air and water filtration; natural pest control; and economic, cultural, spiritual and recreational benefits. It stands to reason that managing our resources and environment is integral to how we develop our cities, suburbs and regions.

As our climate changes, we become particularly vulnerable to the risks associated with extreme weather patterns, which will significantly impact where we live and the infrastructure we will need to sustain our way of life. Indeed, what we build now and into the future will need to respond to these anticipated impacts to avoid increased operation and maintenance costs, particularly in coastal settlements and areas near bushfire hazard zones.

Our increasing desire to live in urbanised areas has also made it more important to protect our natural resources, enhance our environment and biodiversity, manage constraints and mitigate against hazards. Ensuring we find ways to remain connected to nature in these built up areas, particularly through our green infrastructure networks, will become increasingly important for our health, happiness and wellbeing.

We recognise that past decisions have changed our natural environment and now more than ever we need to protect it so it can continue to support our communities. The planning system has a key role to play in this.

In particular it will be important to:

- mitigate and adapt to climate change
- facilitate green infrastructure and water sensitive urban design to respond to our changing urban form
- protect and secure our water resources
- value and enhance biodiversity
- build resilience to hazards.

## Key benefits of protecting and enhancing our natural resources and environment

The following section discusses some of the key benefits of protecting and enhancing our natural resources and environment, along with some of the key trends that will affect our future.

## Climate change mitigation and adaptation

South Australia is vulnerable to changes in the temperature, extreme weather events, sea level rise and associated storm surges. The state's future prosperity and liveability will depend on how effectively we address and respond to the impacts of climate change.

South Australia has exposure risks to several natural hazards including bushfires, floods, landslides, earthquakes and extreme heat. These are likely to increase in regularity and severity with the changing global climate. We are also exposed to other hazards including the storage and management of hazardous materials and contamination of land.

Many of South Australia's urban areas, regional towns and critical infrastructure are located along the coast. The continued increase in sea level and storm surges poses risk to these assets.

Designing climate-smart development is also important to reduce emissions, support green industries and green infrastructure, and enable the better management of water.

The greening and cooling effect that soft landscaping (green infrastructure) has on residential and commercial areas will also be a key adaptation response to the increase in frequent extreme temperatures and the urban heat island effect.

Protecting and re-establishing biodiversity is important to restoring and maintaining our functioning ecosystems in special areas of the state, and making our environment more resilient to the anticipated impacts of climate change.



Adelaide's average number of hot days above 30° is predicted to increase by up to 47 days per year by 2017

Despite our hot, dry climate, we can mitigate the urban heat island effect by growing our urban tree canopy and retaining water in urban landscapes.

## Key trends–what are we seeing?

**A warmer and drier climate with more extreme weather events**

Climate projections[1] indicate there will be:

- Warming temperatures in all seasons across South Australia. By 2100 it is projected that average temperatures will increase by up to 3°C.
- Reduced annual rainfall and more time spent in drought. By 2100 it is projected that winter and spring rainfall will decrease by between 10% and 45%.
- Sea level rise and an increase in coastal erosion. By 2100 it is projected that South Australian mean sea level will rise by up to 80cm and there will be an increase in storm surge events and coastal erosion.
- Increasing bushfire risk. By 2100 it is projected the number of days of very high or extreme fire danger index will increase across South Australia by between 25% and 120%.

**The cost of dealing with natural hazards is increasing significantly**

The total cost of natural disasters in Australia is forecast to more than double in real terms to $39 billion per year by 2050[2].

**South Australia is getting smarter about water**

- The diversity of water sources in South Australia has increased, including wastewater recycling, stormwater reuse and desalination[3].
- South Australia has the highest percentage of households with rainwater tanks in Australia[3].

**Note:** Please refer to the Natural Resources and Environment Background Paper for references.

## Liveability, wellbeing and inclusion

Contact with nature enriches our physical, psychological, social and spiritual health and wellbeing. These links between the natural environment and our own wellbeing have been understood for a long time.

Access to high-quality public space is a key ingredient of healthy, liveable cities. Quality green spaces can provide a focus for social interaction between neighbours and help support, safe, healthy and connected communities. There is substantial evidence that people with access to high quality open space are more likely to walk and undertake physical activity.

Parks and other areas of public open space provide: local opportunities for people to walk, cycle and be active; exposure to nature, which can be restorative; and positive mental health benefits and places for social interaction, which are critical for creating and maintaining community cohesion and building social capital.

The benefits of green infrastructure (such as public green space) also include improved air quality, less noise pollution and reduced risks from flooding and heatwaves.

South Australia has a strong history of prioritising the conservation of our natural environment with the parks system covering more than 21% of the state. Protecting and conserving these areas of natural environment and improving the connectivity between biodiversity corridors will be increasingly more important for continuing health, wellbeing and enjoyment (see Box 1).

> People who live in neighbourhoods with higher density of trees on their streets perceive themselves to be significantly healthier and have fewer cardio-metabolic conditions.

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## Key trends–what are we seeing?

**Reduced private open space**

- Infill development, increased dwelling density and a trend to larger houses on smaller allotments are reducing private open space in urban areas.

**Loss of tree canopies in metropolitan Adelaide**

- Recent data indicates that most metropolitan Adelaide councils have experienced a decline in canopy cover and an increase in hard surfaces such as roads. For example, a recent report found that 17 of the 19 councils had a loss of green cover over the period 2013 to 2016[4].

**Connection with nature improves health and wellbeing**

- Contact with nature has been associated with a number of health benefits for everyone, particularly children who demonstrate improved cognitive function, increased creativity and reduced rates of aggressive behaviour[5].

**Declining biodiversity**

- The number of threatened species is growing and today 63% of the state's mammals, 29% of birds and 23% of vascular plants are considered threatened[6].

**Note:** Please refer to the Natural Resources and Environment Background Paper for references.

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

Nature in the city - the greatest benefit is enjoyment. There are few families who have never fed ducks in the local park – and wildlife can sometimes even become part of the family. For instance, in Australia many people feed resident magpies, kookaburras and even possums.

The local animal becomes a type of 'wild pet' and may even be given a name. Moreover, urban wildlife is often the primary means through which children connect with and experience nature, helping them develop positive attitudes towards the environment.

Also, understanding and connecting with animals forces us to consider bigger issues, causing us to question the environmental needs of animals and how, as humans, we impact on their ability to survive and what we should be doing to help.

Ultimately, caring for local wildlife opens the door to understanding the broader needs of the planet.

The successful incorporation of biodiversity must be considered at all stages of urban development. It should be constantly revised as conditions change. If a community is to be constructed on a greenfield site, the retention of natural bushland and large trees is necessary to support those species that would otherwise find it impossible to survive.

In developed communities, local parks should be redesigned to offer food and shelter to wildlife. In high-density communities, tree-lined streets, median strips and roof gardens can all make a big difference to the retention and preservation of wildlife.

*Professor Chris Daniels,*
*Professor of Biology,*
*University of South Australia*

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## Economic competitiveness

Adelaide's location, climate, nature and resources provide us with premium food and wine for exporting, clean air and water, building materials, recreational opportunities and increased tourism markets[7].

Therefore, maintaining and enhancing our healthy, biologically diverse environment will help make South Australia a better and more productive place to live.

Sustainability is also a vital component of our competitiveness as it helps to eliminate waste, promote efficiency and drive innovation[8].

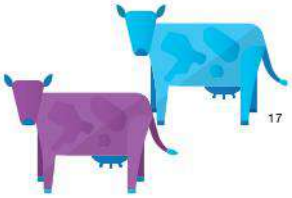
Water security underpins sustainable economic development, population growth, primary production, food security and a healthy urban ecology.

There are also high economic costs associated with climate change if it is not adequately mitigated and adapted to.

Attractive natural environments and accessibility to green infrastructure are crucial to the character, amenity and overall appeal of an area. This appeal can have a direct impact on the property value of a suburb, particularly those with 'leafy green streets'. Indeed, studies show people are willing to pay more for good views of distance, water and large trees.

Commercial properties with exposure to a healthier, greener environment have also been proven to deliver significant health benefits for staff and increase productivity for businesses in the way of reduced absenteeism, more rapid recovery from stress, increased patience and overall satisfaction in the workplace[9].

Investment in a low carbon, circular economy also presents us with an opportunity to unlock the full value of our resources, form global connections, and boost our premium food and wine sector[10].




IN 2013-14 THE AGRICULTURE, FOOD AND WINE INDUSTRIES CONTRIBUTED **$17.1 BILLION** TO STATE ECONOMY, EMPLOED **1 IN 5 WORKERS** AND ACCOUNTED FOR MORE THAN 40% OF OUR MERCHANDISE EXPORTS


PROPERTY VALUE IN LEAFY STREETS CAN BE UP TO **20% HIGHER** THAN SIMILAR PROPERTIES IN TREELESS STREETS

## Key trends–what are we seeing?

**Green public realm = higher property prices**

- Research is finding that across Australia, people are willing to put a dollar value on green spaces and trees, including:
  - A 2016 research report by the University of Queensland which found that in 2010, Brisbane's street trees generated property value benefits of $29 million – more than twice the cost of planting and maintaining them[11].
  - A 2013 report from Melbourne property research and buyers' advocacy firm Secret Agent which found that property with direct park land views out-performed most other properties in a given suburb[12].

**Natural views attributed to reduced absenteeism**

- A 2011 University of Oregon study found that 10% of employee absences could be attributed to architectural elements that did not connect with nature[9].
- The study found that workers with a view of trees and landscape took 57 hours of sick leave per year, compared with 68 hours per year for those who didn't. Based on this, features like green roofs can provide excellent views to nature even in commercial, urban settings[9].

**Soil and water quality key to our economy**

- Having a clean and green environment has increasing economic value as the world demand for safe and healthy products increases. Nearly 40% of South Australia's exports are agricultural products reliant on healthy soils and adequate water[3].

**Waste management = $1 billion for SA economy**

- The waste management and resource recovery industry in South Australia has an annual turnover of around $1 billion, contributes $500 million annually to Gross State Product and employs around 4800 people. South Australia also has the highest per capita recycling rate in Australia – nearly 80% of total waste generated is recovered[13].

**Reduced emissions no effect on GSP**

- According to the greenhouse accounting data from the Australian Government, the state's net emissions in 2012/13 were 9% below 1990 levels. During this time, our Gross State Product (GSP) increased by more than 60%, demonstrating that economic growth can be decoupled from growth in greenhouse gas emissions[3].

**Note:** Please refer to the Natural Resources and Environment Background Paper for references.

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# WHAT ROLE DOES PLANNING PLAY?

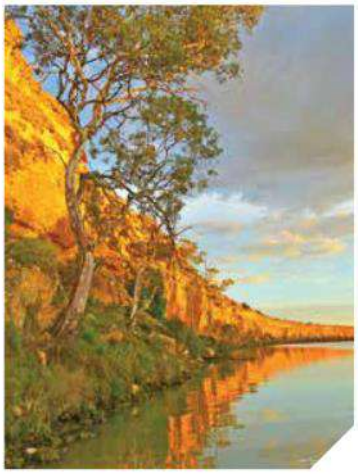
Urban and regional planning has always played an essential role in protecting and enhancing our natural resources and environment, including:

- protecting areas of environmental significance
- protecting and enhancing areas that attract tourism and are value to the community
- maximising the use of our natural resources
- Optimising the use and maximising the benefit of our natural resources.

With the introduction of our new planning system, we have an opportunity to lead by example in protecting the natural environment, contributing to tourism opportunities and increasing liveability.

The principles of protecting and enhancing the state's natural resources and environment are well reflected in South Australian planning policy, including:

- the **draft State Planning Policies**, which provide direction in relation to biodiversity; climate change; design quality; coastal environment; water security and quality; natural hazards; and emissions and hazardous activities.
- the current **Planning Strategies** for South Australia (which will serve as the state's **interim Regional Plans**) provide direction in relation to climate change; water; biodiversity; emergency management and hazard avoidance; infrastructure; and design quality. For example, recognising and protecting environmental assets; ensuring the efficient use of water and energy; protecting people, property and the environment from exposure to hazards; sustainably managing waste, wastewater and stormwater; creating conditions to become resilient to the impacts of climate change; and fostering sustainable alternative energy and water supply industries. **The 30-Year Plan for Greater Adelaide 2017 Update** also includes measurable targets to facilitate increased urban green cover (trees and shrubs) while creating a walkable compact urban form (Targets 1 and 5).
- the **South Australian Planning Policy Library (SAPPL)**, which contains a suite of general policy modules as well as a series of maps and a suite of zones that focus on specific environmental areas (e.g. Coastal Conservation Zone, Coastal Open Space Zone, Coastal Settlement Zone, Coastal Marina Zone, Conservation Zone, Open space Zone, River Murray Flood Zone, Water Protection Zone, Nature Resources Management Module and Watershed Protection [Mount Lofty Ranges] Zone). Refer to the Background Paper for a complete list of relevant SAPPL zones and general modules.
- There are also a number of existing variations to SAPPL policy relating to natural resources and environment policies, as well as within the Development Plans that have not yet been converted to SAPPL policy. The recently undertaken **review of current Development Plans** provides an understanding of these policy variations in order to establish a common ground to achieve the required level of policy consistency across the state via the Code.



**Strategic framework guiding the Code**

The preparation of the Code needs to consider how we can further protect and enhance our natural resources and environment through planning policy. It will also need to directly reflect the policy direction contained within key government strategic documents, in particular the State Planning Policies and Regional Plans.

State Planning Policies identify matters of state interest that should be considered in the Code. In a number of cases these will be addressed through overlays. The Code will include zones, subzones and overlays. Overlays can change the level of assessment required and trigger a referral.

Refer to Figure 4 for an example of how the new planning system's strategic framework will guide the Code.

Refer to *The Planning and Design Code – How Will It Work? Technical Discussion Paper* for further information.

## Working with other levers

Protecting our natural resources and environment also requires input from other parties such as the state government, councils and private land holders. It is therefore critical that other programs and 'levers' outside of the planning system are also used to ensure strategic directions are achieved. Examples of other levers include:

- The National Construction Code
- Water allocation plans, permits and licences
- Building upgrade finance mechanisms which help homeowners and businesses with energy, water and environmental efficiency improvements
- Carbon off-set programs for regional areas, incorporating native vegetation
- Council investment in water sensitive urban design and green infrastructure (e.g. rain gardens, swales and street trees)
- Educational programs and regional climate change adaptation forums.

There are also a number of Acts that work together with the PDI Act to protect and enhance natural resources and the environment. Refer to the background paper for further detail.

- The suite of other legislative measures to protect our environment and natural resources.

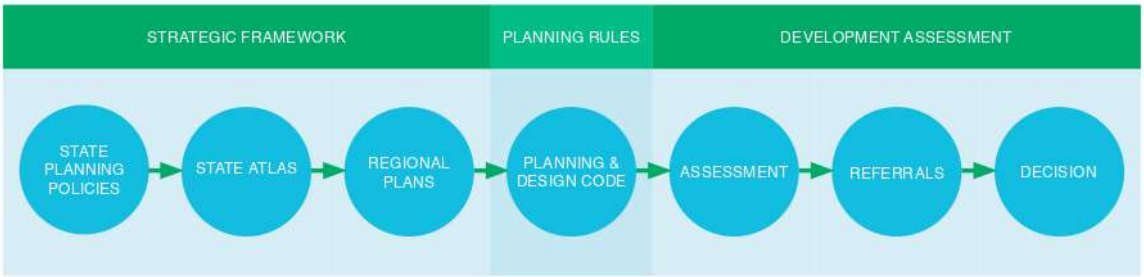



**Figure 4:** An example of how the new planning system's strategic framework will guide the Planning and Design Code

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

Based on the outcomes of the research and investigations conducted in the preparation of this paper, the following themes emerged as the main policy areas that are critical to the protection and enhancement of our natural resources and environment.

## THEME 1: Sustainable and Liveable Urban Environments

Enabling the delivery of urban environments that are more liveable and adaptable to a changing climate is critical to a sustainable future. This includes planning for the delivery of green infrastructure and water sensitive urban design, energy efficient design and effective waste management.

### 1.1 Green Infrastructure and water sensitive urban design

Green infrastructure (GI) describes a network of green spaces, street trees, water systems and other urban vegetation that can deliver multiple environmental, economic and social values to urban settlements. Water Sensitive Urban Design (WSUD) brings components of the water cycle together, including supply and demand, mains water, wastewater, rainfall, runoff and groundwater, and contributes to the local character, environment and community.

There is increasing awareness of the importance of, and opportunities to better facilitate, GI and WSUD in urban environments to assist with urban cooling, reduce building energy use and improve biodiversity.

The Code will have an important role to play in including policy that encourages the increased uptake of WSUD performance measures related to water conservation, stormwater quality improvements and flooding control (e.g. rain gardens, swale and permeable paving).

Planning policies for GI are relatively new in South Australia and include measures such as green roofs and green walls and deep soil zones for large trees. Green infrastructure can also be delivered at the micro and macro level, from living walls, roof gardens and along pathways to parks and reserves, transport corridors and in watercourses and wetlands.

Such is the importance of GI and WSUD policies to creating greener, more sustainable communities, the Commission has identified this as one of the seven priority Policy Conversation Areas it will lead in the course of developing the Code. As part of this process, the Commission and the Department of Planning, Transport and Infrastructure will meet with industry groups and the broader community during the consultation phase of a GI and WSUD policy discussion/position paper produced by Water Sensitive SA (refer to Box 2 for further details).

### 1.2 Energy efficient design

The National Construction Code is an important tool in achieving energy efficient buildings. Our new planning system will work with it to play a significant role in setting policy for design tools such as allotment creation at land division stage and building orientation to ensure solar and natural light access for habitable buildings.

Energy efficient design can include building orientation and design, window placement, eave width, solar access and infrastructure and materials selection.

A sustainably designed development plays a fundamental role in creating sustainable and liveable urban environments. Promoting renewable energy sources and neighbourhood level alternative energy supply and storage options in new developments to reduce energy costs and carbon footprint is vital. However, the upfront costs of these need to be considered and planning controls cannot override the National Construction Code.

### 1.3 Waste Management

The waste management hierarchy (Figure 5) is recognised internationally as an aspirational framework for sustainability and underpins South Australia's Waste Strategy 2015-2020. Recognising there are instances where waste cannot be avoided, the hierarchy provides a framework to maximise the useful life of materials. Planning policy has an important role to play to ensure waste collection methods, required infrastructure and access/timing for collection are appropriately considered.

At the smaller scale, with our changing denser urban form, consideration needs to be given in the Code about how we collect and relocate waste and recyclables.

The effective management of effluent disposal and waste minimisation is also essential to protect public health and minimise environmental impacts and will be addressed in the Code. This is particularly relevant in regional areas where public infrastructure is sometimes limited.

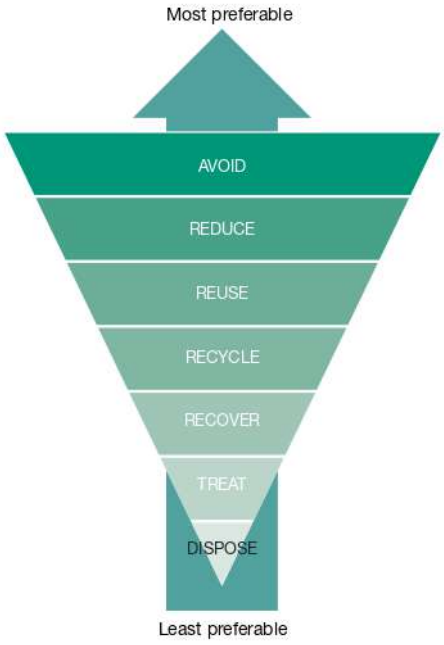



**Figure 5:** Waste Management Hierarchy

## THEME 2:
## Water Security and Quality

Water quality and security are fundamental to the sustainability of settlements and industry in South Australia, particularly in relation to the Mount Lofty Ranges Watershed Protection Area, Prescribed and Non-prescribed Water Resources and the River Murray.

### 2.1 Mount Lofty Ranges Watershed Protection Area

Protecting Greater Adelaide's water supply catchment areas from inappropriate development is critical to ensuring our long-term water security.

It is therefore crucial to protect and secure water resources in the Mount Lofty Ranges Watershed. Unlike other states of Australia where water catchment areas are almost entirely publicly owned, the Mount Lofty Ranges Watershed Protection Area has a high level of private ownership. A further challenge in getting the right planning policy balance is that it is also an important area for primary production, is populated and has significance as a tourist destination. The Code provides an opportunity to provide a consistent policy approach through the introduction of an Overlay as well as greater guidance for emerging land uses.

### 2.2. Other Watershed Protection Areas

Prescribed surface and groundwater resources are managed under the provisions of the Natural Resources Management Act 2004[1] through a system of Water Allocation Plans, permits and licences. The role of planning policy is to support this process by protecting these areas from inappropriate development to protect water supplies. There is potential for the Code to achieve this through the introduction of an overlay. This overlay could draw from the learnings of the recent Rural City of Murray Bridge Regional Integrated Water Management DPA (refer to the Background Paper for more information).

Non-prescribed water is a particularly important resource within regional areas where water supply from the River Murray is not available and where water is obtained through direct extraction from groundwater or natural watercourses, rainwater collection, stormwater harvesting and wastewater reuse systems. Planning policy within the Code should seek to ensure that these resources are protected e.g. by giving clarity for when dams are considered development and require planning approval.

### 2.3 River Murray

The River Murray is the life-blood of the state, providing essential water for irrigation, industry, domestic and recreational use and our precious wetlands and floodplains. The river is a critical water supply source for towns and metropolitan Adelaide, is used for primary production, and is also a popular tourism and recreation destination.

Policy for land-use activities and intensity clearly has an impact on water resources, their ongoing availability and quality. In SA's regional towns and communities, the combined supply of wastewater from SA Water Wastewater Treatment Plants and Local Government Community Wastewater Management Schemes, together with stormwater capture and reuse, are all becoming increasingly important to meet water demand and reduce environmental impact.

All of these often-competing demands need to be considered in the policy framework for the Code, both in its first iteration and the generations to follow. There is also an opportunity to develop a regional approach to deal with policy inconsistencies between different council areas. The River Murray has been recognised as an integral water supply catchment in the draft State Planning Policies and will trigger a referral to the appropriate agency through an overlay (where required).

*1. The Natural Resources Management Act will be repealed and replaced with the Landscape South Australia Act over the next 12 months.*

## THEME 3:
## Biodiversity

Biodiversity is the foundation of a healthy ecosystem which sustains regional industries and communities. Landscapes that hold less biodiversity (due to human impact) become less productive, which is evidenced by a decline in soil structure and fertility, decreased water quality and lost agricultural production.

Re-establishing biodiversity throughout urban areas is also important for restoring functioning ecosystems as well as mitigating species loss and the effects of climate change.

It is important that planning policy supports the protection of areas with significant environmental values; protects landscape health; and improves development certainty and transparency.

Urban biodiversity can also be supported through a diverse and connected network of green infrastructure.

## THEME 4:
## Coastal Environments

South Australia contains 5067 kilometres of coastline (the majority of which is covered by the Coastal Conservation Zone) and contains settlements, primary production land and the edge of the Metropolitan Adelaide area. Coastal areas support important ecological systems and environments and also play a key role in the state's economy through aquaculture, recreation and tourism, transport and industry.

It is important to have planning policies in place to protect:

- habitats that are highly sensitive to the direct impacts of development
- important geological and/ or natural features of scientific, educational or cultural importance
- landscapes of very high scenic quality.

The Code will also provide an opportunity to consolidate existing policy to create more consistency and ease of use.

The coastal environment has been identified as a state interest in the draft State Planning Policies and will trigger a referral to the Coastal Protection Board through an overlay (where required).

## THEME 5:
## Natural Hazards

Inappropriately located or designed development and land uses can increase the exposure to and impact of hazards such as terrestrial and coastal flooding, bushfires, drought, extreme heat, erosion, acid sulphate soils, storms and dust events, riverbank collapse and cliff erosion. 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 of:

- avoid
- accommodate.

The Code provides an opportunity to better understand the spatial application of natural hazards and consolidate existing policy.

## THEME 6: Environment Protection and Environment Health

To sustainably maintain our population and economic activity, it is essential to effectively manage the impacts of pollution and waste created by human activities. This includes ensuring an appropriate policy response to:

- site contamination
- interface (including noise and air emissions).

### 6.1 Site contamination

A number of land parcels in South Australia have some form of site contamination, most often within the layers of soil below the surface. Certain contaminants left behind by previous land uses can cause problems for human health if they are present in high enough concentrations.

Contamination does not only occur in soil but also in surface and ground water, causing ongoing issues for land uses. It is important to ensure the risks posed by known or potential contamination of sites are adequately managed to enable appropriate development and safe use of land.

Increasing urban infill puts pressure on using land once occupied by activities that may have left contaminants. Locating residential areas within close proximity to existing and ongoing industrial uses therefore needs careful consideration when developing planning policies.

### 6.2 Interface (including noise and air emissions)

Effective management of air and noise emissions at the interface between activities and people or sensitive environments is important to ensure that communities are adequately protected from potential impacts. This is increasingly important to manage as our population grows, urban densification increases and mixed-use areas become more common.

Within regional and remote areas, rural populations may be exposed to a range of hazards such as those associated with intensive animal keeping facilities, mining operations, logging and timber activities, agricultural activities, landfills and sewage treatment facilities. All of these need careful management and appropriate planning policies to minimise any interface issues.

# POLICY CONVERSATION AREA – GREEN INFRASTRUCTURE AND WATER SENSITIVE URBAN DESIGN

In response to the opportunity provided by the Planning and Design Code, Water Sensitive SA (WSSA) has partnered with a number of key stakeholders (including DPTI) to develop a contemporary, workable suite of planning policies for WSUD and GI. Investigations and research were combined with practitioner workshops and input from industry leaders, including developers, engineers, landscapers, health workers and planners to inform its development.

This work has culminated in the development of the *Performance Based Planning Provisions and Assessment Framework for Green Infrastructure and Water Sensitive Urban Design Background Paper.* The paper seeks to inform and support the development of:

- high level objectives and principles for GI and WSUD under the PDI Act
- performance-based planning provisions for GI and WSUD for the Code, Standards and Guidelines
- a framework to enable the assessment of green infrastructure and WSUD elements of a development against the performance criteria.

The paper recommends performance-based measures for GI and WSUD. The proposed policies are intended to be flexible, transparent, measurable and applicable to all scales of development. Draft provisions cover policy issues including canopy cover, flood control, water conservation and stormwater quality improvements. The paper also recommends other assessment tools including:

- the development of a green cover performance measure, which could be assessed through calculation of a green cover score based on a range of landscaping features such as trees, shrubs, irrigated turf and vertical gardens
- an online stormwater assessment tool to enable simple assessment of WSUD requirements for small-scale applications, for example for developments on allotments of less than 2500 $m^2$ for residential development and 5000$m^2$ for commercial developments.

This report is available at: **www.watersensitivesa.com** and will undergo further industry and community consultation separately and in parallel to this discussion paper.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## HOW CAN OFFSET SCHEMES SUPPORT DELIVERY OF GI AND WSUD?

A planning system that supports sustainable on-site green cover and stormwater management targets while offering mechanisms for off-site solutions where appropriate, may provide the most efficient and affordable model for delivering urban green cover and tree canopy targets in the 30-Year Plan and state WSUD objectives.

Examples of existing models for voluntary offsets or in-lieu schemes for stormwater management include the City of Kingston (Victoria) and Blacktown City Council (New South Wales). Both these councils have developed a WSUD strategy that sets out preferred precinct or catchment scale solutions as opposed to smaller on-site measures.

The Seattle Green Factor, an international model for enhanced urban greening on private allotments, is a score-based assessment framework that provides for improved quality and increased areas of landscaping in new developments. This model has the potential to be adapted to cater for a voluntary urban green cover offset scheme, should a council deem that an offsite solution provides the greatest benefit to the community.

The Water Sensitive SA In-Site stormwater assessment tool for small-scale development, currently in testing, could be readily adapted to support an offset scheme.

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# TRANSITIONING TO THE PLANNING AND DESIGN CODE

The following section details the policy direction recommendations for the establishment of the Code that have been formed based on the investigation and review undertaken in the development of this Policy Discussion Paper. For further detail on the information that has led to these recommendations, please refer to the Natural Resources and Environment Background Paper.

The recommendations have been prepared in line with the six major policy themes and criteria outlined in the table below:

1. **Sustainable and Liveable Urban Environments,** including:
   - Green infrastructure and water sensitive urban design
   - Energy efficient design
   - Waste management
2. **Water Security and Quality,** including:
   - Mount Lofty Ranges Watershed Protection Area
   - Other Water Protection Areas
   - River Murray.
3. **Biodiversity**
4. **Coastal Environments**
5. **Natural Hazards**
6. **Environment Protection and Public Health,** including:
   - Site contamination
   - Interface including noise and air emissions.

The below table outlines the three types of recommendations and associated timing.

| | |
|---|---|
| **Transition ready** | **Current policy that requires minimal change** and will be transitioned into the first generation (July 2020) of the Code Policy Library (Transitional) |
| **Reform (Gen 1)** | **Current policy that is recommended for improvement** before it is transitioned into the first generation (July 2020) of the Code Policy Library (Reform which is minor based on research and engagement which is already well progressed or underway) |
| **Reform (Gen 2 and beyond)** | **Gaps within existing policy that require further research and discussion** before they can be considered for inclusion (Second generation and beyond) of the Code Policy Library (reform in a new area) |

**Discussion questions** relating to each of the major policy themes have been included for consideration when reviewing the recommended policy directions. These questions are intended to provoke thought and seek guidance on the recommendations and we ask that you please consider them when providing feedback to this document.

**Note:** Refer to the **Background Paper** for information about where other system tools and levers play a role in assisting in the delivery of the policy outcomes for a particular theme.

## THEME 1: Sustainable and Liveable Urban Environments

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **1.1 Green Infrastructure and Water Sensitive Urban Design** | | | |
| 1A | 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. | Review, refine and transition existing SAPPL WSUD policy where appropriate. | **Transition ready** ✓ |
| 1B | There is increasing recognition of the value of GI in creating cooler, more liveable and economically viable neighbourhoods.<br>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 policy[1] where appropriate. | **Transition ready** ✓ |
| 1C | 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. | Develop new 'Deemed to Satisfy' and 'performance outcomes' policy for WSUD and GI[1]. | **Reform (Gen 1)** |
| 1D | In infill areas, where there is limited private land, there may is 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. | **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?*

*1. Consider in the context of the consultation (to be undertaken) on the Green Infrastructure and Water Sensitive Urban Design Background Report and the Policy Conversation Area (Green Infrastructure, WSUD and Environmental Resilience).*

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **1.2 Energy Efficient Design** | | | |
| 1E | These policies are relatively sound and are ready for transition. | Review existing SAPPL energy efficiency policies and undertake consolidation and minor refinement where necessary. | **Transition ready** ✓ |
| 1F | 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. | Review energy efficient policies relating to non-residential building types[2]. | **Reform (Gen 1)** |
| 1G | 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. | 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. | **Reform (Gen 1)** |

**Discussion Questions:**

- *What role should the planning system play regarding preservation of sunlight to solar panels from adjacent development?*
- *Should the Code introduce incentives for developments that can incorporate passive solar design (siting) techniques, green infrastructure and WSUD?*
- *How can planning policy contribute to reduced carbon emissions from the built environment sector?*

*2. Note: Any planning policy amendments must not contradict the National Construction Code.*

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **1.3 Waste Management** | | | |
| 1H | These policies are relatively sound and are ready for transition. | Review existing SAPPL policies and consider minor refinement where necessary. | **Transition ready** ✓ |
| 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). | 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. | **Reform (Gen 1)** |

**Discussion Question:**

- *How do we plan for current waste removal practices and technologies and provide flexibility for innovative future solutions?*

## THEME 2: Water Security and Quality

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **2.1 Mount Lofty Ranges Watershed Protection Area** | | | |
| 2A | From consultation to date with relevant councils and agencies, the following issues have been identified:<br>• inconsistencies with referrals resulting from changes to non-complying forms of development across planning authorities<br>• emerging land uses with similar impacts not being subject to the same requirements (e.g. breweries and cideries versus wineries)<br>• the lack of policy guidance for other emerging land uses, including value-adding activities<br>• some known high impact land uses are currently unrestricted whilst other low impact uses are restricted. | 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[3]:<br>• adopting relevant policy amendments derived from the EPA's 'Hierarchy of acceptable effects' to water run-off in the MLRWPA<br>• applying a spatial overlay to all affected areas. | **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 1)** |
| 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:**<br>• *Should dams be assessed as development in the planning system?* | | | |

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **2.3 River Murray** | | | |
| 2D | A regional approach to deal with policy inconsistencies between River Murray council areas is needed. For example, a consistent approach to river structures and moorings on the river.<br>There is a need to retain and consolidate key policies and zones relating to the protection of important natural environments, water bodies, biodiversity and conservation areas. | Review relevant SAPPL and existing Development Plan Zones to determine new Code Zone(s) and review the following policies[4]:<br>• Envisaged land uses<br>• Moorings and structures<br>• Shacks and waste water management<br>• General environment protection<br>• Excavation and filling in any future marina zoning<br>• Farming, tourist accommodation and workers accommodation<br>• Consistent enclosed ground level area requirements. | **Reform (Gen 1)** |
| 2E | The intensification of land use in close proximity to the river, wetlands and conservation areas through the creation of additional allotments needs to be addressed. | Review existing SAPPL and Development Plan land division policies in areas adjacent to the river. | **Reform (Gen 2 and beyond)** |
| 2F | There is potential to introduce a River Murray Water Protection Area to facilitate a coordinated regional approach to the implementation of planning policies. | Develop an Overlay which aligns with the River Murray Water Protection Area. | **Reform (Gen 2 and beyond)** |
| **Discussion Questions:**<br>• *Should we instead use the 1956 flood data as an indicator of risk in the future?*<br>• *Should sheds be made an exemption from the requirement to refer notice under the River Murray Act 2003?* | | | |

*3. A working group with nine councils, EPA, DEW, PIRSA and SATC will explore the policy content of this overlay.*

*4. Working group with eight relevant councils and the EPA, DEW, PIRSA and SATC.*

## THEME 3: Biodiversity

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| 3A | The transition to the Code creates an opportunity to refine policies in order to minimise different interpretations. | 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. | **Transition ready**  |
| 3B | There is an opportunity to reduce duplication of policy (currently in separate zones and general modules). | Consider one conservation zone, with spatial overlays (such as coast) that apply where required to trigger referrals and reflect state interests. | **Reform (Gen 1)** |
| 3C | 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. | Strengthen policies for the interface between protected areas and adjoining land uses (from existing Natural Resources general module policy). | **Reform (Gen 1)** |
| 3D | 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. | Ensure appropriate spatial application of policy (to land adjacent to nature protection areas). | **Reform (Gen 1)** |
| 3E | 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. | **Reform (Gen 2 and beyond)** |

**Discussion Questions:**

- *Can the Code protect biodiversity in areas not identified as native vegetation and in modified landscapes with biodiversity values?*
- *Can planning policy assess the cumulative impact of development on biodiversity?*
- *Can planning policy play a role in protecting and encouraging backyard biodiversity?*
- *Do we need a policy to protect and encourage development of roadside vegetation?*

NATURAL RESOURCES & ENVIRONMENT

## THEME 4: Coastal Environments

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| 4A | The transition to the Code creates an opportunity to refine policies in order to minimise different interpretations. | 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. | **Transition ready**  |
| 4B | There is an overlap between the 'High Water Mark' and 'Low Water Mark' in Development Plans and there is an opportunity to deal with this as part of the transition to the Code. | Resolve the 'High Water Mark' and 'Low Water Mark' overlap between Land Not Within A Council Area (Coastal Waters) and other Development Plans. | **Transition ready**  |
| 4C | 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). | **Reform (Gen 1)** |
| 4D | 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. | **Reform (Gen 1)** |
| 4E | 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). | **Reform (Gen 1)** |
| 4F | 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)** |

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| 4G | 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 facilities in aquaculture zones. | **Reform (Gen 2 and beyond)** |
| 4H | 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 and beyond)** |

**Discussion Questions:**

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

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## THEME 5: Natural Hazards

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| 5A | Hazard policy needs to be reviewed, consolidated and best practice policy applied. | Consolidate and transition relevant SAPPL Hazards, Coastal Areas and Land Division general modules policy to the Code. | **Transition ready**  |
| 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.<br>Acid sulphate soil areas could be applied as an overlay (using mapped areas in existing Development Plans), subject to consistency of data.<br>Bushfire mapping, methodology and possibly policy need updating (with reference to recent changes to Victorian and New South Wales policy).<br>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:<br>• Mapped flood areas as a new Flood Risk Overlay<br>• a Bushfire Risk Overlay<br>• other hazards currently mapped such as coastal hazards and acid sulphate soils. | **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. | **Reform (Gen 1)** |
| 5D | There is an opportunity to improve flood mapping by:<br>• updating the mapping of all flood-prone areas using a consistent methodology<br>• 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. | **Reform (Gen 2 and beyond)** |

**Discussion Questions:**

- *How can we better integrate council-owned flood data with the new Code and achieve consistency?*
- *What climate change projections should be used? What time-frame and emission scenarios?*
- *Should flood risk categories be based on physical (depth and velocity) and function and isolation risk factors?*

## THEME 6: Environment Protection and Public Health

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **6.1 Site Contamination** | | | |
| 6A | The transition to the Code creates an opportunity to refine policies in order to minimise different interpretations. | Review and transition relevant SAPPL site contamination policies to the Code. | **Transition ready** ✓ |
| 6B | 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). | Review and develop appropriate policy for planners to assess site contamination where no referral is required. | **Reform (Gen 2 and beyond)** |
| **6.2 Interface including noise and air emissions** | | | |
| 6C | 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. | Review and refine the SAPPL Interface Module as required. | **Transition ready** ✓ |

**Discussion Questions:**

- *Should cumulative noise impact assessments be undertaken as part of the development assessment process?*
- *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.*

# NEXT STEPS

The *Natural Resources and Environment Policy Discussion Paper* will be out for public consultation until **3 December 2018**.

For information about the specific engagement activities, please visit **www.saplanningportal.com.au**

The feedback received will help inform the preparation of Generation 1 of the Code Library and help prioritise future work and investigations for subsequent generations of the Code. The outcomes of the consultation process will be released in a 'What We Heard' report.

The remaining **Blueprint for South Australia's Planning and Design Code Policy Discussion Papers** will be released progressively, with each available for public comment and accompanied by opportunities for industry and community engagement.

The Commission's **Policy Conversation Areas** will work through some of the more significant policy issues that will be a focus for reform in 2018 and beyond. These are aligned to one or more of the Policy Discussion Papers and form a key component of the Commission's engagement process during the development of the Code.

In parallel, the draft **State Planning Policies** are also out for consultation until 7 September 2018.

The draft **Code Policy Library** will be released progressively for consultation in 2019.

# HAVE YOUR SAY

In recognition of the importance of collaboration in building a successful new planning system, the Commission is seeking feedback from planners, the community, industry professionals, educational institutions and other interested parties on this paper.

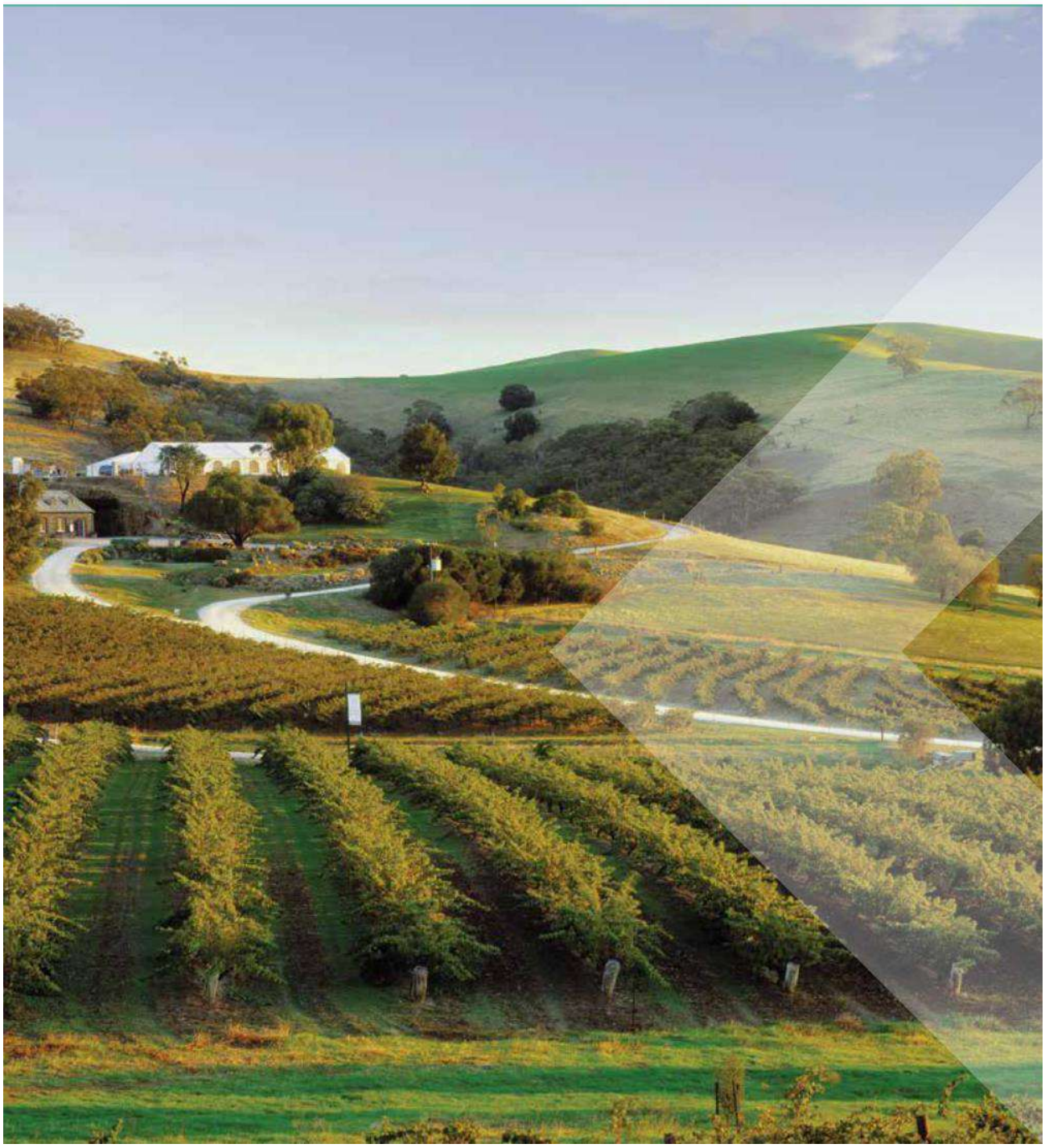
Your feedback is encouraged via:

- SA Planning Portal: Visit the Have Your Say webpage and lodge a submission at **http://www.saplanningportal.sa.gov.au/have_your_say**
- Email: DPTI.PlanningEngagement@sa.gov.au
- Post: PO Box 1815, Adelaide SA 5001

**Discussion questions are included throughout the paper as well as the following general feedback questions.**

| Feedback questions |
| --- |
| Are there any other key opportunities and challenges that you think the Code should respond to? |
| Are there any other ideas for Code policy solutions you would like to recommend? |

NATURAL RESOURCES & ENVIRONMENT



# HOW YOU CAN GET INVOLVED

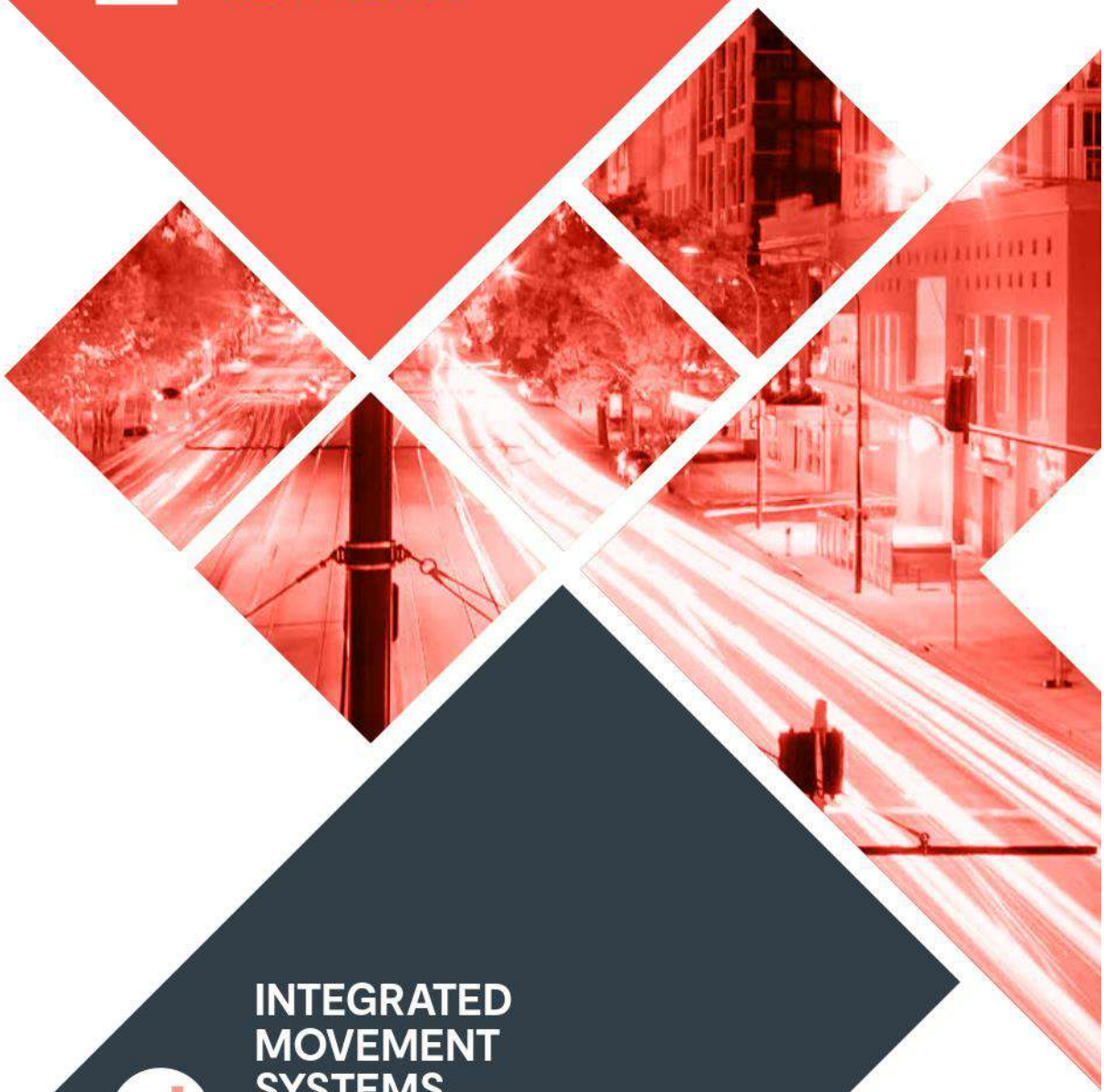
We invite you to participate and share your feedback on this policy discussion paper via:
**www.saplanningportal.sa.gov.au**

For more information, please contact us:
**dpti.planningengagement@sa.gov.au**

Government of South Australia
Department of Planning, Transport and Infrastructure

**saplanningcommission.sa.gov.au**

STATE PLANNING COMMISSION



# INTEGRATED MOVEMENT SYSTEMS

## POLICY DISCUSSION PAPER

August 2018

Government of South Australia
Department of Planning, Transport and Infrastructure

saplanningcommission.sa.gov.au

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- Statutory Planning Reform Committees (Local Government, Development Industry and Community Participation and Sustainability)
- Industry Liaison Group
- Local government, agency, industry and community attendees of the State Planning Commission workshop held on 17 May 2018
- All contributors to the Car Parking Summit YourSAy survey and community focus groups

We look forward to receiving further contributions as we move into the consultation phase of this paper.

**Further Information**

For a full description of the key research and investigations, evidence, facts, figures and references that support the statements and recommendations contained within this Policy Discussion Paper, please refer to the *Integrated Movement Systems Background Paper*. A copy of the paper can be downloaded from the SA Planning Portal.

Photos used throughout this document are courtesy of the Department of Planning, Transport and Infrastructure, the South Australian Tourism Commission, Renewal SA and City of Adelaide and professional photographers contracted to these organisations.

Integrated Movement Systems Policy Discussion Paper
State Planning Commission
August 2018
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A future vision for integrated movement systems.
Our vision is to support an urban form that promotes walking, cycling and public transport. We acknowledge that many South Australians enjoy a high level of personal mobility and value a city that provides a range of transport options including use of the private car.
Increasing public transport and active travel requires us to make it more desirable. It needs to be safe, cost effective, time efficient and take people to places they want to go. From a planning perspective, this means supporting quality urban design, affordable housing and the right land use mix around fixed line public transport services. It also means creating hubs of activity in places that can be accessed by trains, trams, buses and bikes. Doing this helps people make transport choices that enable Adelaide to grow as a sustainable city – carbon efficient, with high air quality, low congestion and improved productivity. Supporting these travel modes also provides greater equity in mobility, with affordable choices for everyone.
GLENELG

# INTRODUCTION

Land-use planning and development in South Australia is changing. In response to these changes, the *Planning, Development and Infrastructure Act 2016* (the Act) is being progressively introduced to replace the Development Act 1993 to enable a more efficient, responsive and effective planning system. The new system will support and enhance the state's liveability and prosperity in ways that are ecologically sustainable and meet the needs and expectations, and reflect the diversity, of its communities.

The Act provides for the creation of the Planning and Design Code (the Code) – a single planning rulebook for assessing all development applications across the state – that will become the foundation of our new planning system. The Code will replace the complex and at times inconsistent planning rules found within the 72 development plans currently in use across South Australia.

In establishing the Code, we have been presented with an opportunity to harness those aspects of our current system that are working well and use them to form the foundation for the future.

Generally, we are doing a pretty good job of it, although there is always room for improvement.

The South Australian Planning Policy Library has provided us with an excellent base from which to begin and we recognise that many councils and communities have a strong sense of ownership over policies that apply to their area.

However, we are aware the Code also presents us with the opportunity to improve and streamline areas where our current policies aren't quite up to scratch–where there may be conflict, duplication or deficiencies–and to develop new policies where gaps exist.

This needs to be done with the understanding that we may not be able to tackle all these issues in the first generation of the Code, which will be operational by July 2020. However; this process allows us to start a series of conversations with the industry and our community about the kind of future we want. This will enable us provide effective planning to help realise the aspirations of future communities, while proactively addressing the challenges we will face along the way.

In doing this, it is important to recognise that planning is just one element of a much bigger system that must work together to create liveable, competitive and sustainable places and spaces. Other levers outside the planning system also need to be pulled to achieve success and we must recognise their relationship to the development of the Code.

At its heart, planning plays a significant role in balancing competing priorities and resolving tensions, in order to help realise what our communities want when it comes to how we live, how we move about, where we work and how we protect our environment.

To this end, this paper focuses on the key issues and opportunities associated with managing the interfaces between South Australia's transport systems and surrounding land uses as we move into our new planning system. In particular, it focuses on the role the planning system can play in achieving optimal land use and development outcomes that complement and support the function of all transport modes, particularly given the rapid technological advancements and our rising urbanisation.

**We look forward to hearing your views on the recommendations we've put forward in this paper as well as continuing to work together to build a successful new planning system we can all be proud of.**

# PURPOSE

In March 2018 the State Planning Commission (the Commission) released its *Blueprint for South Australia's Planning and Design Code* (Figure 1), which introduced:

- A series of policy discussion papers designed to stimulate thought around the policy direction for the Code.
- A series of technical discussion papers to establish the operational framework and content requirements for the Code. The first technical paper – *Planning and Design Code: How will it work?* – is now available on the SA Planning Portal.
- A series of key policy conversations the Commission would like to have with the industry and the community in relation to those areas it anticipates will require a greater level of reform. Each Policy Discussion Paper will be closely aligned to at least one of these dedicated Conversation Areas.

In the case of this paper, the associated conversation will focus on **Sustainable mobility, car parking and the impact of technology**, which was discussed at the recently held Metropolitan Adelaide car parking summit.

This Integrated Movement Systems Policy Discussion Paper is one in a series of four papers that explore land use policies in South Australia.

The other papers consider:

- Natural Resources and Environment
- People and Neighbourhoods
- Productive Economy.


**Figure 1:** The Introductory Paper can be downloaded from the SA Planning Portal at: **www.saplanningportal.sa.gov.au**

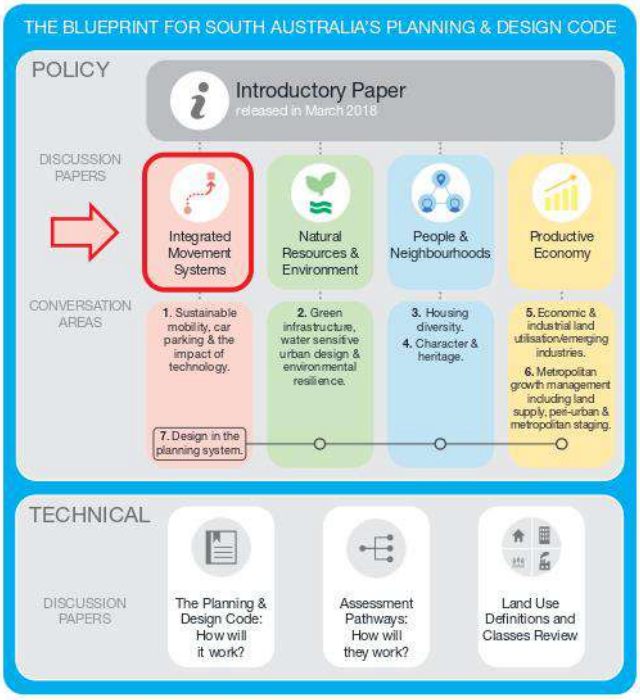



**Figure 2:** Context of this discussion paper against elements of the Blueprint.

The Policy Discussion Papers are intended to be read and considered as a 'family' and will assist the Commission to establish the planning rules that will ultimately constitute the new Planning and Design Code.

Each paper has been developed through an extensive investigation and peer review process which has incorporated the following:

- a review of the South Australian Planning Policy Library (SAPPL)
- investigation of case studies and best practice policy examples from Australia and the world
- workshops with state agencies, councils and special interest groups
- Commission-led policy workshops
- a review of South Australia's Development Plans in partnership with local government
- a peer review process with thought leaders and key stakeholders such as planning reform advisory groups and government agencies.

This discussion paper draws on the results of these investigations to:

- highlight key emerging trends that may require a planning policy response
- identify gaps or deficiencies in existing policies of the South Australian Planning Policy Library (SAPPL) that need to be addressed to ensure alignment with government strategic directions. (See Figure 3.)
- identify opportunities to consolidate duplicated policy
- highlight investigations and research undertaken or identified to inform proposed policy directions.

Ultimately, the intent of this paper is to recommend policy directions for the Code, including identifying:

- where existing policy is likely to be transitioned to the Code ('Transition ready')
- areas where further investigations or reform are necessary ('Reform Gen 1 or Reform Gen 2 or beyond')

These recommendations are offered in line with the following policy themes which play a key role in the delivery of Integrated Movement Systems in our new system:

- aligning South Australia's growth with transport infrastructure
- capitalising on strategic transport infrastructure
- planning for sustainable mobility, car parking requirements and the impact of technology.

To access the full evidence on which this discussion paper is based, please read the supporting **Integrated Movement Systems Background Paper**.

In recognition of the importance of collaboration in building a successful new planning system, discussion questions have been included (on the back page) as a means to promote thought and seek guidance on the policy recommendations contained within this paper. Please consider them when providing your feedback. Further policy discussion questions have been also included at the end of each theme to help policy formulation for future iterations of the Code for Generation 2 or beyond.

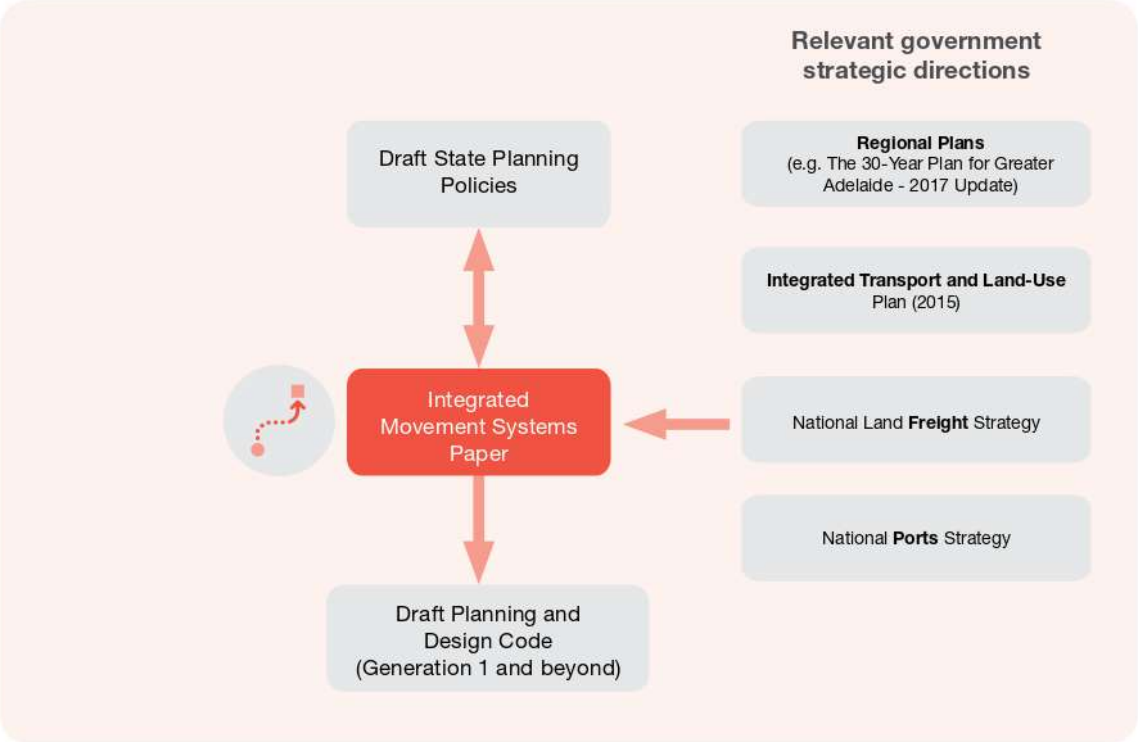



**Figure 3:** Integrated Movement Systems Policy Discussion Paper in relation to new planning instruments and government strategic directions.

NOTES:

*The draft State Planning Policies are on consultation from 16 July to 7 September 2018.*

The State Planning Commission is mindful of the recent change of Government, and that current strategic directions may evolve as the new Government continues to progress its agenda.

# WHY ARE INTEGRATED MOVEMENT SYSTEMS IMPORTANT?

Movement systems encompass the diversity of methods used to move people and goods around our cities, regions and across our borders. From freight delivery to international trade, leisure travel and commuting, our movement networks directly influence the lives of most people every day.

The performance of our transport networks and systems is closely related to patterns of development and the value of land, particularly in urban areas where land use mix has a strong influence on movement patterns (such as commuting), supply chain efficiency and network demand (e.g. peak hours and congestion).

The more localised aspects of transport planning, such as requirements for individual developments, can also have a cumulative effect on urban form across neighbourhoods.

Development that is successfully integrated with transport not only helps people move safely, efficiently and to more places, it also allows for more sustainable and coordinated growth, supports economic productivity and delivers network efficiency and safety.

## Key Benefits of effective Integrated Movement Systems

Integrated Movement systems have a number of benefits:

**Economic competitiveness**

The design and location of transport infrastructure can be a key driver of growth by making places more accessible, productive and open for investment. Integrated planning helps ensure the consequences of investment are positive and lead to better outcomes.

It is therefore important to identify and protect land for strategic transport corridors, especially for city-shaping infrastructure investments, the facilitation of regional development and industry growth. Failure to do so can fragment labour markets, diluting the scale efficiencies of metropolitan areas in matching skills to industry requirements.

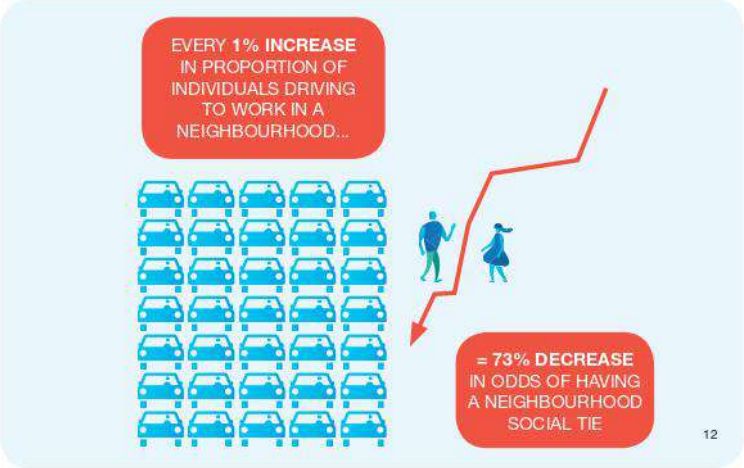
In addition to freight, modern services and knowledge-based economies compete with each other globally as knowledge workers are highly mobile and seek an improved quality of life. South Australia is uniquely positioned to be able to integrate infrastructure carefully, capitalise on its natural advantages and attract and retain knowledge workers and therefore industries.

## Liveability, wellbeing and inclusion

Successful integration, together with an improved mix of transport choices, can help reduce urban sprawl and the need to increase road capacity. This in turn supports land use development that promotes active travel, social interaction, economic activity and community connectedness.

Density also underpins the creation of walkable neighbourhoods by bringing destinations closer together and providing a customer base to ensure that local shops, services and public transport remain viable.

The interface between busy movement corridors and residential neighbourhoods must be carefully managed to avoid health impacts through exposure to emissions, noise and vibration. Ensuring these interfaces are well managed is critical to our new urban form and the health and liveability of our neighbourhoods.




**Better balance between access and activity**

Great streets are destinations in their own right. The best examples attract investment and result in higher land and development values. They represent around 80 per cent of public space in cities and contribute in many ways to their economic, environmental and social functioning. While they are important public places, they also need to be accessible, fast, efficient and minimise travel time.

There is increasing recognition of the importance of striking a better balance between access ('Links') and activity ('Places') along our streets. Conventional streets typically prioritise the movement of vehicles, with the quantity and quality of space for people on foot often only considered as an afterthought.

The 'Link and Place' approach advocates that both these functions be given equal consideration, with the balance guided by the street's role within a wider street network hierarchy. (refer Figure 4).


**Figure 4:** Examples of a 'Link' corridor and a 'Place'.

**Reduced carbon footprint and climate change mitigation**

Moving towards an integrated transport system will also help reduce greenhouse gas emissions by decreasing vehicle travel, cutting land consumption and reducing the need to continue building road capacity.

Shaping the pattern of development and influencing the location, scale, density, design and mix of land uses can also ensure that transport infrastructure is utilised to its full potential.

Promoting a more compact urban form (through locating jobs and housing closer to public transport to reduce private vehicle travel) will play a role in reducing the growth of greenhouse gas emissions and mitigating climate change.

**Smart cities and harnessing of technology**

Advances in technology are having a fundamental impact on our cities and regions, particularly in relation to new lifestyle and behaviour patterns, how we move around and the disruption of established industries.

In the future, autonomous vehicles, smart parking, electric vehicles and on-demand services are among the new technologies likely to significantly influence the transport and land use requirements of our cities and could play a valuable role in reducing private vehicle dependence.

A smart city is one where public infrastructure, data technology and the internet are successfully integrated in order to improve the quality of life for people living, visiting and working in the area.

## Key trends influencing change

There are a number of demographic, environmental, economic and social trends that are causing fundamental shifts in the way we live, work and move around. Those that are most likely to influence the integration of movement systems with development patterns in South Australia are outlined below.

**Spread out city - low density and high private car usage**

The Greater Adelaide region is home to 1.3 million (84% of the state's population) and has a footprint more than double the size of Greater London, which is home to 8.7 million (Figure 5). Our low population density means there are fewer people in any given area to support local services, therefore where we live and work can often be located some distance apart. This is a fundamental challenge that significantly contributes to our reliance on private vehicles. In 2013, Adelaide had the highest private vehicle travel to work (84%) and the second lowest proportion of people walking to work (2.9%) in Australia[1].

In addition, the Adelaide CBD features the highest percentage of daily car commuters of all Australian capital cities (54.4%), significantly more than Melbourne (30.6%) and Sydney (17.4%)[2].

This is despite the fact that our average daily traffic delay is second only to Sydney, and that one in three Adelaide homes are located within 400 metres of a frequently serviced public transport stop (compared to one in five nationally)[3].

At 8.7%, Adelaide has the lowest public transport usage, compared to 22.7% in Sydney, 15.5% in Melbourne, 11.4% in Brisbane and 10.2% in Perth[4]. This could be partly attributed to the fact that the average price of parking in the CBD is substantially lower than anywhere else in the country[5] and we have 25.2 spaces available for every 100 workers in the CBD – the highest in the nation[6].


**Figure 5:** The footprint of Greater Adelaide compared to Greater London.

**We're getting older and households are getting smaller**

Not only are South Australians getting older, we are also living in increasingly smaller households which is having a direct impact on how and where we're choosing to live. By 2036, South Australia's total population will reach 2 million people – almost a quarter of whom will be aged 65 and over[7]. More importantly, a fifth of the state's seniors will be aged 85 and over. This means we will have the nation's highest proportion of people aged over 85 years and, for the first time, the aged population will outnumber the youngest members of our community[8].

Increasingly, older people are living in their communities for longer and have more choices about lifestyle, services and where they live. As they age, they will also require convenient access to alternative travel options. This signals that now more than ever before, it is critical for South Australia to have strategies in place that plan for older people and their movement. There is increasing pressure to deliver adaptable environments that support the delivery of safe and accessible dwellings, movement networks and public facilities that not only meet the needs of all aged groups but also support active ageing.

The size of the average household in South Australia has more than halved over the last century from 4.5 people to 2.5. This is supported by a 2.3% decline in the number of households comprising couples with children, a 32% increase in the number of couples living without children and a 54% increase in the number of people who are living alone[9].

Our changing population has seen Adelaide's historical desire for growth to the north and south of the city slow significantly in the past decade. In 2015, approximately 76% of all new housing in Greater Adelaide was constructed in established suburbs[10], resulting in an increased demand for varied housing alternatives (e.g. row and terrace houses, as well as units and apartments) located in high-amenity, mixed use environments closer to the city and offering a wider choice of transport options (such as Bowden and Lightsview).

**Technology is changing how we live and how we move**

New and emerging transport technologies are set to have a transformative effect on cities, transport behaviour and urban life.

These changes in technology have the potential to transform our transport networks, including designing for autonomous vehicles and reduce private car parking requirements.

They may also lead to improved liveability outcomes alongside or adjacent to major movement corridors.

The emergence of on-demand and automated mobility technologies is likely to cause significant shifts in vehicle ownership and licensing patterns, car parking requirements and public transport services. Already countries including Australia and the United States are seeing a decrease in the number of younger people obtaining a licence, citing cost and lack of interest in driving as reasons for not doing so[11]. This will be further exacerbated as the ageing population increases and with it the demand for more coordinated and alternative movement systems.

Over the past decade, advances in information and communication technologies have led to a decrease in the number of people needing to travel for work. In response, planning controls have provided more allowances for home-based businesses and it is expected there will be an increase in the number of mixed-use precincts that will further reduce the separation between employment and residential uses. This will create more places where people can live, work and play without having to commute or travel as far to access services and amenities.

**Market dynamics and development economics**

Some of our contemporary planning policy reflects these trends and emerging needs, however their successful implementation is influenced by a range of local market preferences and development economic considerations.

Recent development across Adelaide have revealed an emerging range of market dynamics that require careful consideration to ensure good quality development that is consistent with both strategic intent and community expectations.

For example, the perceived market expectations for private, secure, undercover car parking, which has resulted in relatively conventional (high) parking provision in areas with good access to public transport (e.g. in the CBD or Bowden) and regardless of prescribed minimum parking rates.

In townhouse type developments, this parking provision tends to impact the quality and function of streets with a proliferation of driveways and garaging. This form of development is often small scale and incremental, making the cumulative effects more difficult to manage than in master planned developments.

Further to this, the high cost of constructing basement parking relative to sales revenues for apartments for higher-density developments in Adelaide (compared to say Sydney) appears to drive a preference for podium or under-croft parking.

This form of parking can result in additional building bulk and height and challenge planning objectives for high-quality or active frontages unless they are carefully integrated.

The effect of these local market dynamics and economic considerations on individual developments appears varied. There are some good quality outcomes and others that are less than optimal. Collectively they suggest a need for policy to carefully consider the cumulative effects of these local circumstances in order to balance strategic intent, commercial considerations, and community expectations.

**Walkable neighbourhoods are in demand**

A more compact form of living will increase the importance of liveability and quality of the public realm in these neighbourhoods, which is an important factor for those cities and regions that wish to attract knowledge-based industries and retain a talented workforce.

The Property Council of Australia has identified that dense cities increasingly offer businesses access to the best customers, supplies, partners and competitors[12].

Healthy, walkable neighbourhoods are places where people can afford to live, learn, work and play. They offer a wide range of services that can easily be reached on foot or bicycle, including schools, health care, shops and public transport (see Figure 6).

With the rise in infill development in Adelaide, there will be many opportunities to increase cycling and walking uptake as 75% of daily trips are predicted to be short journeys of between three to six kilometres[13].

*Note: Refer to the Integrated Movement Systems Background Paper for references.*


**Figure 6:** Examples of elements that contribute to a healthy and walkable place to live

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# HOW WILL OUR PLANNING SYSTEM SUPPORT THE INTEGRATION OF MOVEMENT SYSTEMS?

Successful implementation of Integrated Movement Systems (IMS) will build on our state's liveability, economic competitiveness and enable the sustainable future of our regions and neighbourhoods by:

- delivering land use outcomes and transport systems that complement each other
- achieving optimal land use and development outcomes with regard to the role and function of all transport modes
- providing for an interface between land uses and transport corridors which improves the function of both.

Achieving these outcomes requires a planning system that encourages and enables appropriate development in locations serviced by a variety of quality transport options and facilities supported by an ongoing commitment to transport investment.

Integrated Movement Systems also have different permutations depending on their geographical areas and associated transport corridors. Many of South Australia's major movement corridors cater for a variety of roles and functions along their length, especially those routes that traverse rural, suburban, urban and city-centre environments. How the associated land use policy both complements and influences these diverse environments is at the heart of successful integrated movement.

## Strategic Directions

The preparation of the Planning and Design Code needs to consider how we can further integrate our movement systems into planning policy. It will also need to reflect the policy direction contained within key government strategic documents, in particular the State Planning Policies (SPPs) and Regional Plans.

Refer to Figure 7 for an example of how the new planning system's strategic framework will guide the Planning and Design Code.

Refer also to *The Planning and Design Code – How Will It Work?* Technical Discussion Paper for further information.

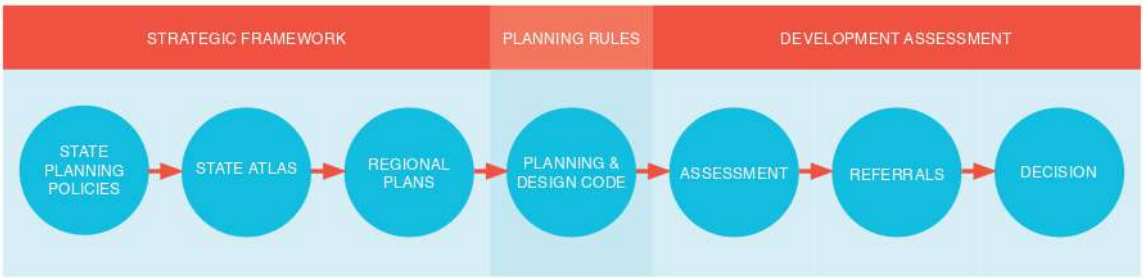



**Figure 7:** An example of how the new planning system's strategic framework will guide the Planning and Design Code

### Draft State Planning Policies

State Planning Policies identify matters of state interest that should be considered in the Code. In a number of cases they will be addressed through overlays. The Code will include zones, subzones and overlays. Overlays can change the level of assessment required and trigger a referral.

The draft State Planning Policies seek to create:

- a more efficient urban form through the improved use of existing infrastructure (via infill) and better coordination of new land / infrastructure resources (via regional planning)
- improved accessibility to social and physical infrastructure to improve our standard of living
- improved liveability by reducing congestion, improving accessibility and reducing commute times
- the sustainable efficient use and distribution of goods, resources and services.

The SPPs therefore provide direction for integrated planning and strategic transport infrastructure across South Australia by emphasising the importance of; planning for orderly, connected growth, providing an adequate supply of land, promoting regeneration and renewal, optimising infrastructure, supporting increased densities in well-serviced areas, protecting the economic function of strategic transport infrastructure and promoting complementary land uses.

### Regional Plans

The current Planning Strategies for South Australia will serve as the state's interim Regional Plans. Regional Plans provide a long-term vision (over 15 to 30 years) for a region or area including provisions about the integration of land-use, transport infrastructure and the public realm.

*The 30-Year Plan for Greater Adelaide - 2017 Update* contains targets, policies and actions that seek a more compact urban form through the encouragement of development close to strategic activity centres, transit corridors and quality public transport (Targets 1, 2, 3 and 4).

The Regional Planning Strategies provide direction for the maintenance, protection and strengthening of strategic infrastructure; provide for competitive freight transport and transfer hubs; and aim to improve public transport and access to health services.

## South Australian Planning Policy Library

The South Australian Planning Policy Library (SAPPL) contains policy and zones that are focused on delivering or integrating with transport and movement routes (e.g. Airfield Zone, Urban Corridor Zone and General Module Transportation and Access.) *Refer to the Background Paper for a complete list of relevant SAPPL zones and general modules.*

The delivery of integrated movement is still a relatively new concept in terms of planning and development in South Australia. Therefore, preparation of the Planning and Design Code needs to consider how we can further promote and incorporate Integrated Movement Systems into planning policy.

## Working with other levers

In establishing the Code, it is important to acknowledge the planning system plays an important role in the achievement of effective integration but also needs to work with other levers outside the planning system.

Land use and transport are overseen by numerous entities across South Australia and the Commonwealth. Therefore, delivery of integrated movement systems requires direction, input and investment from multiple parties across different jurisdictions, including state government agencies, the Federal Government, councils and private land holders.

It stands to reason that there are several key strategies and programs outside of the planning system that need to be leveraged to ensure successful integration is achieved.

One of the most critical is the state government's *Integrated Transport and Land Use Plan (ITLUP)* which sets out a program of major transport infrastructure investment required to support the state's growth and productivity over the short, medium and long term. Other levers that are relevant include:

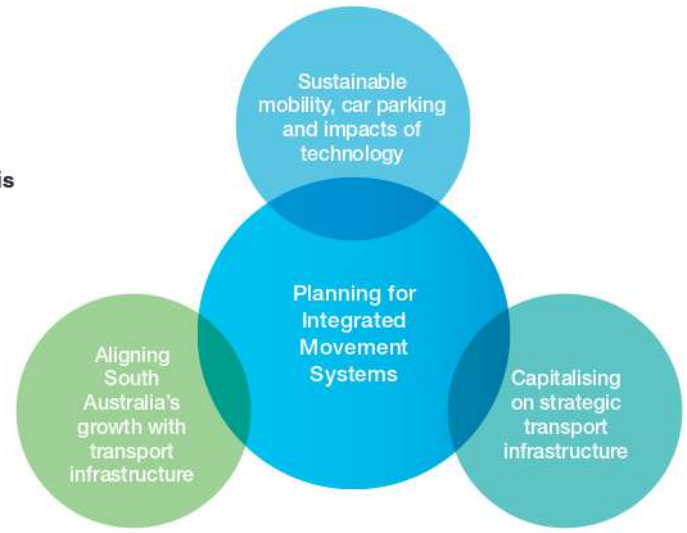
- Public transport capital investment e.g. improving and / or expanding the provision of fixed-line or other rapid public transit.
- Cycling infrastructure investment (by state and local government)
- Local government transport plans
- Financial incentives e.g. stamp duty concessions.

There are also a number of Acts that work together with the PDI Act to protect and enhance natural resources and the environment.

*Refer to the background paper for further detail.*

## How will the new system deliver integrated movement systems?

**Based on the outcomes of the research and investigations conducted in the preparation of this paper, the following three themes have been identified as the main policy areas that are critical to the delivery of Integrated Movement Systems through the new Code.**



## THEME 1: Aligning South Australia's growth with transport infrastructure

The coordination of development with the provision of efficient transport networks is a fundamental element of all modern urban areas and an important ingredient in the economic viability of all new development, both in metropolitan and regional township areas. It is also critical that, as our state continues to grow, people are provided with a greater variety of transport choices to get to where they need to go.

Due to the expensive nature of constructing new mass transit networks, governments at all levels are seeking to maximise the value of existing infrastructure networks and create liveable and affordable communities. This may include initiatives to expand capacity, improve regularity or increase the efficiency of services.

Across metropolitan and urban areas of South Australia, policy should encourage the development of land at higher densities for a wider mix of activities, strategically located in areas close to a wide variety of transport options, particularly quality public transport.

Areas rich in these attributes are highly valued and most commonly occur along high frequency transport corridors and adjacent to well-serviced regional centres.

In regional areas of South Australia, strategic policies in Region Plans consistently encourage a broader mix of higher density residential and commercial land in close proximity to or within well-serviced regional centres. These locations tend to be the best serviced by a variety of transport modes, mixed uses and social services.

It is therefore important our new system retains and transitions the policy intent of current zones that promote improved integration of land use with major transport corridors (including the Urban Corridor Zone, Urban Core Zone, Residential High Density Zones and Mixed Use Zones). The further application of these zones along underutilised transport corridors will be considered once the Code is in place.

## THEME 2: Capitalising on strategic transport infrastructure

South Australia's strategic transport facilities and networks are critical in connecting people with places and produce with markets.

While local streets, greenways and neighbourhood connections can be utilised as valuable and sometimes pleasant extensions of the public realm, major transport corridors and facilities serve a primary purpose as transport linkages or gateways which are of strategic economic importance.

Our planning policies should protect major transport corridors and strategic transport facilities from incompatible development to ensure their ongoing, uninterrupted and efficient operation.

Examples of such facilities include major airports (including flightpaths), sea ports, intermodal or bulk handling facilities, mass transit corridors and strategic freight routes.

Many of our major corridors and facilities have been operating in areas of our state which have been developed for a long period of time or where existing interfaces require sensitive and ongoing management. To reflect these situations, it is important that, where possible, planning policy minimises interface impacts by balancing the ongoing rights of existing land uses with the operation of strategic transport infrastructure.

## THEME 3: Sustainable mobility, car parking and the impact of technology

Enabling more people to adopt cycling, walking and other non-motorised transport for commuting and other transport purposes – as distinct from purely recreational reasons – is an important objective of integrated transport and land use planning. It is therefore important that, where possible, our new system contains policies that promote walking and cycling to ensure travel mode shift and improve community health outcomes.

As more jobs, services and community infrastructure are located close to where people live (or more people live where jobs and services already exist) the required travel distance for some purposes lessens. In view of this, it is expected that active travel will have an increased role in mobility across Greater Adelaide and in regional centres as walking and cycling become more popular, viable transport modes.

Another increasing influence on our travel behaviour is the growing use of ride-sharing initiatives, electric vehicles and emerging technologies such as driverless cars. These innovations are set to have a transformative effect on cities, transport behaviour and urban life.

It is therefore important that planning can adapt and is responsive to change. To this end, our new system will need to understand new technology as it evolves and shapes the user experience of our cities and regions.

For example, a reduced reliance on private vehicles has the potential to change future requirements and the development economics of car parking, particularly in relation to supply and demand.

Historically, changes in movement behaviour has meant that parking policies have not been static and can be a complicated area for planners, communities and businesses to resolve.

It is for this reason that car parking in metropolitan Adelaide was selected as a key area for review as part of the Commission's Policy Conversation Area. The intent of the review was to consider:

- the real value of car parking spaces
- the influence of car parking on integrated movement systems
- whether using public and private space for the storage of private vehicles is the best planning outcome.

To date, the review has included public consultation via a YourSAy survey which received 840 responses, several focus groups and a summit with councils, thought leaders and industry representatives (refer to page 22). The results from the review have been included in the recommended policy directions for this paper.

# POLICY CONVERSATION AREA – SUSTAINABLE MOBILITY, CAR PARKING AND THE IMPACT OF TECHNOLOGY

## Metropolitan Adelaide Car Parking Summit

On 6 April 2018, about 60 representatives from a range of industry groups, government agencies and local government met with the State Planning Commission to discuss the current state of car parking in metropolitan Adelaide. This summit is part of the Policy Conversation Area - Sustainable Mobility, Car Parking and the Impact of Technology.

The summit provided a forum for attendees to explore some of the most commonly reported issues experienced by local residents, councils and businesses, including:

- urban infill leading to increased demand for, and scarcity of, car parking
- excessive parking on local streets creating problems for access and movement
- on-street parking overflow impacts from nearby interchanges and attractions
- cultural and behavioural impacts
- a lack of viable alternative transit options.

A series of innovative opportunities and potential responses were tabled during the discussion, with the following proposals identified as having potential to be explored through the development of the Code:

1. Unbundling housing from car parking and providing alternatives such as parking locations close by, particularly in higher density areas.
2. Considering whether policy in relation to enclosed garages that encourage on-street car parking should be reviewed.
3. Moving away from minimum car parking rates and considering maximums.

Many of the solutions offered such as demand management, education, infrastructure and enforcement, cut across a variety of policy areas and will be passed on to the appropriate agencies and relevant councils for action. The key outcomes from the summit were used to inform a detailed policy review included in the background paper.

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# TRANSITIONING TO THE PLANNING AND DESIGN CODE

The following section details the policy direction recommendations for the establishment of the Planning and Design Code that have been formed based on the investigations and review undertaken in the development of this Policy Discussion Paper. For further detail on the information that has led to these recommendations, please refer to the Integrated Movement Systems Background Paper.

The recommendations have been prepared in line with the three major policy themes and criteria outlined in the table below:

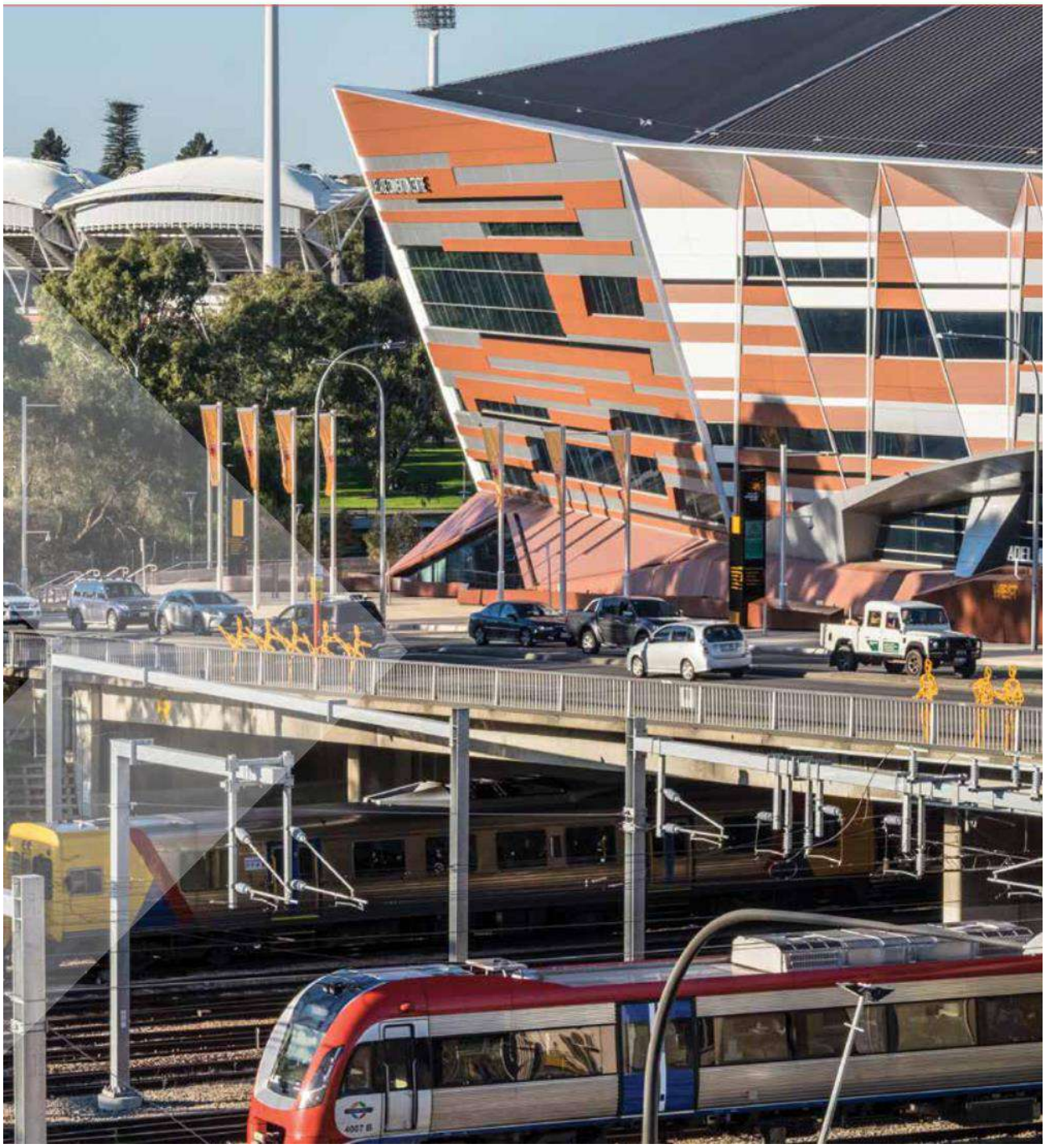
- Aligning South Australia's growth with transport infrastructure
- Capitalising on strategic transport infrastructure
- Sustainable mobility, car parking and the impact of technology

The below table outlines the three types of recommendations and associated timing.

| | |
|---|---|
| **Transition ready** | **Current policy that requires minimal change** and will be transitioned into the first generation (July 2020) of the Code Policy Library (Transitional) |
| **Reform (Gen 1)** | **Current policy that is recommended for improvement** before it is transitioned into the first generation (July 2020) of the Code Policy Library (Reform which is minor based on research and engagement which is already well progressed or underway) |
| **Reform (Gen 2 and beyond)** | **Gaps within existing policy that require further research and discussion** before they can be considered for inclusion (Second generation and beyond) of the Code Policy Library (Reform in a new area) |

**Discussion questions** relating to each of the major policy themes have been included for consideration when reviewing the recommended policy directions. These questions are intended to promote thought and seek guidance on the recommendations and we ask that you please consider them when providing feedback on this document.

Refer to the **Background Paper** for further detail in regard to the recommendations e.g. proposed next steps. Advice has also been provided as to where **other system tools and levers** could play a role in assisting in the delivery of the policy outcomes for a particular theme.



## THEME 1: Aligning South Australia's growth with transport infrastructure

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| 1A | In 2012, a suite of higher density, mixed use zones were introduced into the SAPPL which have been spatially applied to a small number of areas adjacent to key transport corridors and centres. These zones help to integrate land use and transport systems and can provide the foundation for this outcome in the new planning system. | Transition zones that promote improved integration of land use with major transport corridors (for example: Urban Corridor Zone, Urban Core Zone, Residential High Density Zones and Mixed Use Zones).<br>*The spatial application of these zones is unlikely to be substantially changed as part of the application of Generation 1 of the Code.* | **Transition ready** ✓ |
| 1B | A minimum threshold of population density to ensure public transport and local shops and services are viable and can be located within walking distance of where people live needs to be identified. | Review the inclusion of minimum net residential densities in Suburban Neighbourhood Zones, Urban Core Zones, Urban Corridor Zones and Suburban Activity Node Zones.<br>*Further discussion and consultation needs to be undertaken to identify the appropriate net residential densities in the context of evolving demographics, market dynamics and development.* | **Reform (Gen 1)** |
| 1C | Some transport corridors are currently underutilised and could benefit from better integration with supporting land uses. | Investigate the spatial application of higher density mixed-use zones (such as those listed above) along appropriate key transport corridors, adjacent activity centres, in urban renewal areas and key strategic sites. | **Reform (Commence Gen 1)** |

**Discussion Questions:**

- *How can the Code better respond to the differences in public transport availability in urban and regional communities?*
- *What other policy provisions are needed to facilitate good quality development that supports the desired minimum residential densities in key zones?*
- *Does existing policy within the SAPPL adequately address issues relating to the perceived quality and impacts of higher density development? For example, the integration and cumulative impacts of parking and vehicle movement, public realm, and streetscape interface). How might targeted policy reform promote or incentivise better outcomes?*

## THEME 2: Capitalising on strategic transport infrastructure

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **2.1 Strategic Transport Facilities** | | | |
| 2A | The SAPPL contains an Airfield Zone which seeks to protect the ongoing operation of airport facilities and manage the interfaces with surrounding land uses.<br>There is an opportunity to expand policy for appropriate complementary development types. | Transition the policy intent of the Airfield Zone and review the permissible uses in these zones to better support complementary development types.<br>*Work with Adelaide Airport Limited, City of West Torrens and other stakeholders within the vicinity of strategic airports* | **Transition ready** ✓ |
| 2B | With the changing nature of the ways freight is moved, there is an opportunity to review the planning policy in relation to the operation of intermodal facilities and freight transport hubs, including their potential future expansion. | Review and Transition the Intermodal Policy Area into the equivalent zone. | **Transition ready** ✓ |
| 2C | The application of planning policy for airports varies considerably across the state. A key opportunity will be to improve policy consistency with Federal Government guidelines on airports. | Review the SAPPL building near airfields and building heights policies and mapping to respond to the NASF Guidelines. | **Reform (Gen 1)** |
| 2D | Protecting ports from encroachment from incompatible land uses is becoming increasingly important to protect their current operations, critical transport links and future expansion opportunities. | Review the range of zones and policy areas that apply to seaports and supporting infrastructure to ensure that policy is fit for purpose. | **Reform (Gen 1)** |

**Discussion Question:**

- *How should planning policy balance the need for airports in strategic locations against the impact of these facilities on adjacent land owners?*

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **2.2 Strategic Transport Corridors** | | | |
| 2E | Currently, the spatial extent of land required for future road widening requirements is not included in Development Plans. | Work with DPTI Transport to review, transition and map road widening provisions and investigate whether they can be incorporated as an overlay or similar in the Code. | **Transition ready** ✓ |
| 2F | Moving into a new planning system, there is a need to ensure that land uses are appropriately supported by transport options and that our transport corridors remain efficient. | Transition the Policy intent of the existing strategic Transport Routes Overlay. This will involve:<br>• reviewing policy and mapping for strategic transport corridors<br>• refining policy (where required) with regard to access requirements, freight routes and road hierarchy.<br>Targeted consultation with affected stakeholders plus general engagement as part of the Code development. | **Reform (Gen 1)** |

**Discussion Question:**

- *How can the Code work to protect the operation of major transport facilities whilst managing the impacts on adjacent development opportunities?*
- *How can planning policy better manage and minimise the impacts of transport corridors on surrounding development (i.e. noise and air pollution for residents)?*

## THEME 3: Sustainable mobility, car parking and the impact of technology

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **3.1 Walking, cycling and other non-motorised transport** | | | |
| 3A | The current walking and cycling SAPPL policy is well placed to be transitioned into the Code. | Transition the SAPPL off-street bicycle parking and the end-of-trip facilities (such as showers, changing facilities and clothes storage). | **Transition ready** ✓ |
| 3B | Cycling routes are not universally incorporated into Development Plans. This leads to inconsistency of application of design rules etc. relating to cycling. | Incorporate identified cycling routes into the Code. | **Reform (Gen 1)** |

**Discussion Question:**

- *How can planning policy better enable the delivery of more walking, cycling and active travel opportunities in our neighbourhoods?*
- *How can planning policy assist in balancing the tensions between prioritising the movement of vehicles (Link) and the quality of the space for pedestrians (Place) along our streets?*
- *How can the Code promote development that contributes positively to streets and the serviceability and quality of the public realm?*
- *Does the Code need to more explicitly anticipate the needs of an ageing population through provision for things like mobility scooters or access vehicles?*

| Ref No. | Key opportunities and challenges | Proposed response | Proposed timing |
|---|---|---|---|
| **3.2 Car parking and emerging mobility technology** | | | |
| 3C | As travel behaviours continue to change, the demand for car parking will also change. It is important that new buildings and structures, particularly multi-level car parks, are adaptable for future uses. | Transition the existing SAPPL policy on the design of car parking structures so they are adaptable for new uses in the future. | **Transition ready** ✓ |
| 3D | Car parking rates in current planning policy are often inflexible and do not consider innovative design or proximity to other transport options. | Rationalise and transition existing car parking rate policies which allow for variation to prescribed minimum parking rates for development proposals which satisfy specific design and transport option criteria. | **Transition ready** ✓ |
| 3E | There is potential for greater standardisation of car parking rates, while still allowing for different rates for conditional and geographical contexts. | Review and consult on car parking rates in Greater Adelaide and regional centres to identify opportunities for greater standardisation through the Code, where appropriate. | **Reform (Gen 1)** |
| 3F | Planning policy has a role to play in encouraging and supporting the uptake of technology which helps future-proof our neighbourhoods. | Develop policy that encourages new developments, in higher density or mixed use zones, to incorporate electric vehicle charging provisions and ensure appropriate infrastructure is in place. | **Reform (Gen 1)** |
| 3G | It is important to ensure that planning policy is in place to help facilitate the uptake of emerging technologies that support better car parking efficiency. | Develop policy for new car parking areas (of a certain size) which encourages the adoption of technologies which can better manage impacts. | **Reform (Gen 2 and beyond)** |

**Discussion Question:**

- *How can planning policy best respond to the impact of emerging technologies on our city and communities and how we move to and through them?*
- *How can the Code best respond to the variances in car parking requirements for different neighbourhoods?*
- *Will the current approach of minimum car-parking rates, with potential for discounted provision, adequately support the desired shift toward more sustainable mobility? Should the Code provide greater opportunity for low or no parking in appropriate circumstances or contemplate maximum parking rates?*

# NEXT STEPS

The *Integrated Movement Systems Policy Discussion Paper* will be out for public consultation until **3 December 2018**.

For information about the specific engagement activities, please visit **www.saplanningportal.com.au**

The feedback received will help inform the preparation of Generation 1 of the Code and help prioritise future work and investigations for subsequent generations. The outcomes of the consultation process will be released in a 'What We Heard' report.

The remaining **Blueprint for South Australia's Planning and Design Code Policy Discussion Papers** will be released progressively, with each available for public comment and accompanied by opportunities for industry and community engagement.

The Commission's **Policy Conversation Areas** will work through some of the more significant policy issues that will be a focus for reform in 2018 and beyond. These are aligned to one or more of the Policy Discussion Papers and form a key component of the Commission's engagement process during the development of the Code.

In parallel, the draft **State Planning Policies** are also out for consultation until 7 September 2018.

The draft **Code Policy Library** will be released progressively for consultation in 2019.

# HAVE YOUR SAY

In recognition of the importance of collaboration in building a successful new planning system, the Commission is seeking feedback from planners, the community, industry professionals, educational institutions and other interested parties on this paper.

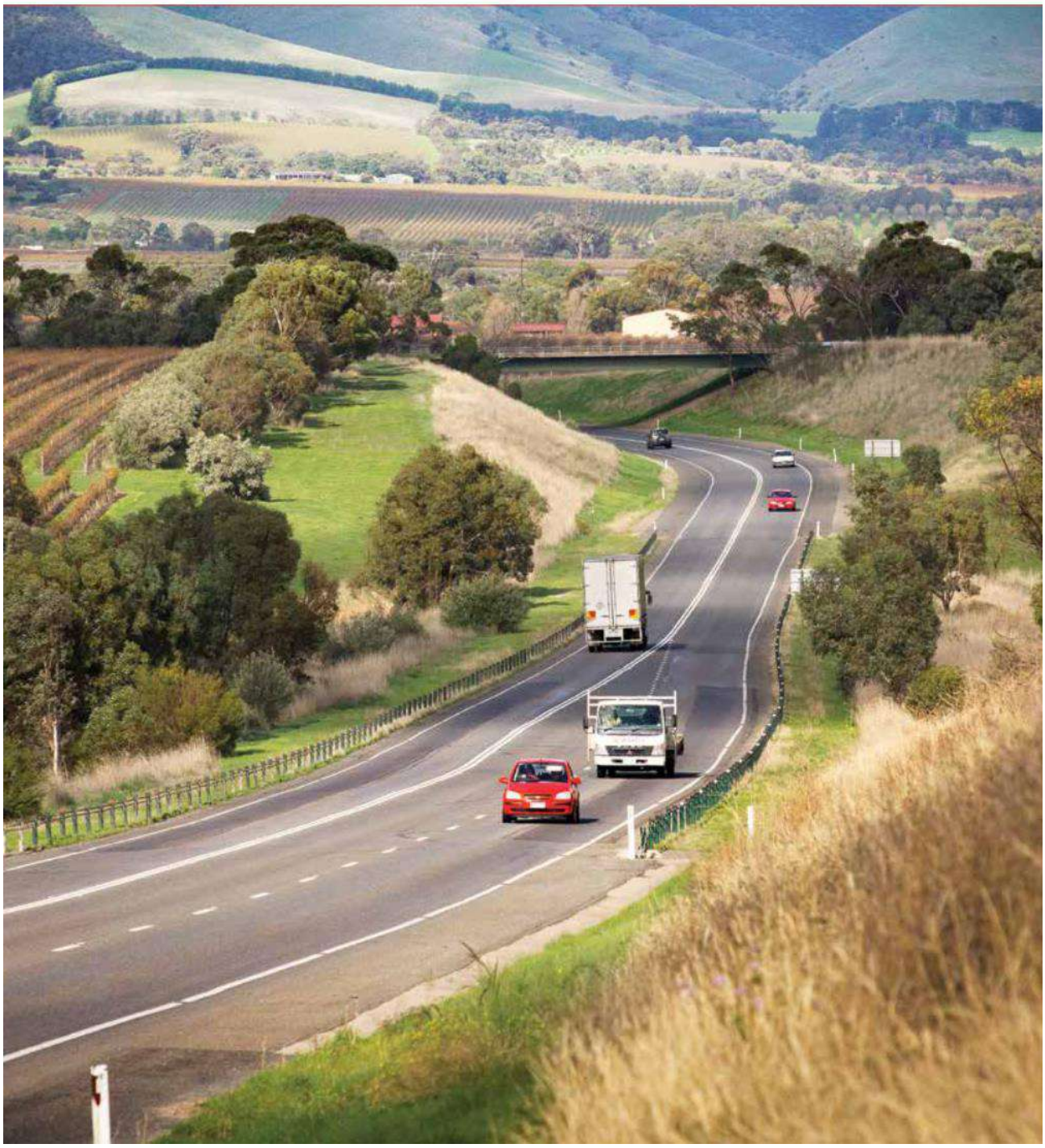
Your feedback is encouraged via:

- SA Planning Portal: Visit the Have Your Say webpage and lodge a submission at **http://www.saplanningportal.sa.gov.au/have_your_say**
- Email: DPTI.PlanningEngagement@sa.gov.au
- Post: PO Box 1815, Adelaide SA 5001

**Discussion questions are included throughout the paper as well as the following general feedback questions.**

| General feedback questions |
| --- |
| Are there any other key opportunities and challenges that you think the Code should respond to? |
| Are there any other ideas for potential Code policy you would like to recommend? |

INTEGRATED MOVEMENT SYSTEMS



# HOW YOU CAN GET INVOLVED

We invite you to participate and share your feedback on this policy discussion paper via:
**www.saplanningportal.sa.gov.au**

For more information, please contact us:
**dpti.planningengagement@sa.gov.au**

Government of South Australia
Department of Planning, Transport and Infrastructure

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Tract
Landscape Architects
Urban Designers
Town Planners
Tract
Springwood, Gawler
Highfield DA Submission
Stage 1 and 2
Prepared by Tract Consultants
for Springwood Communities
30 March 2017 12:14 PM
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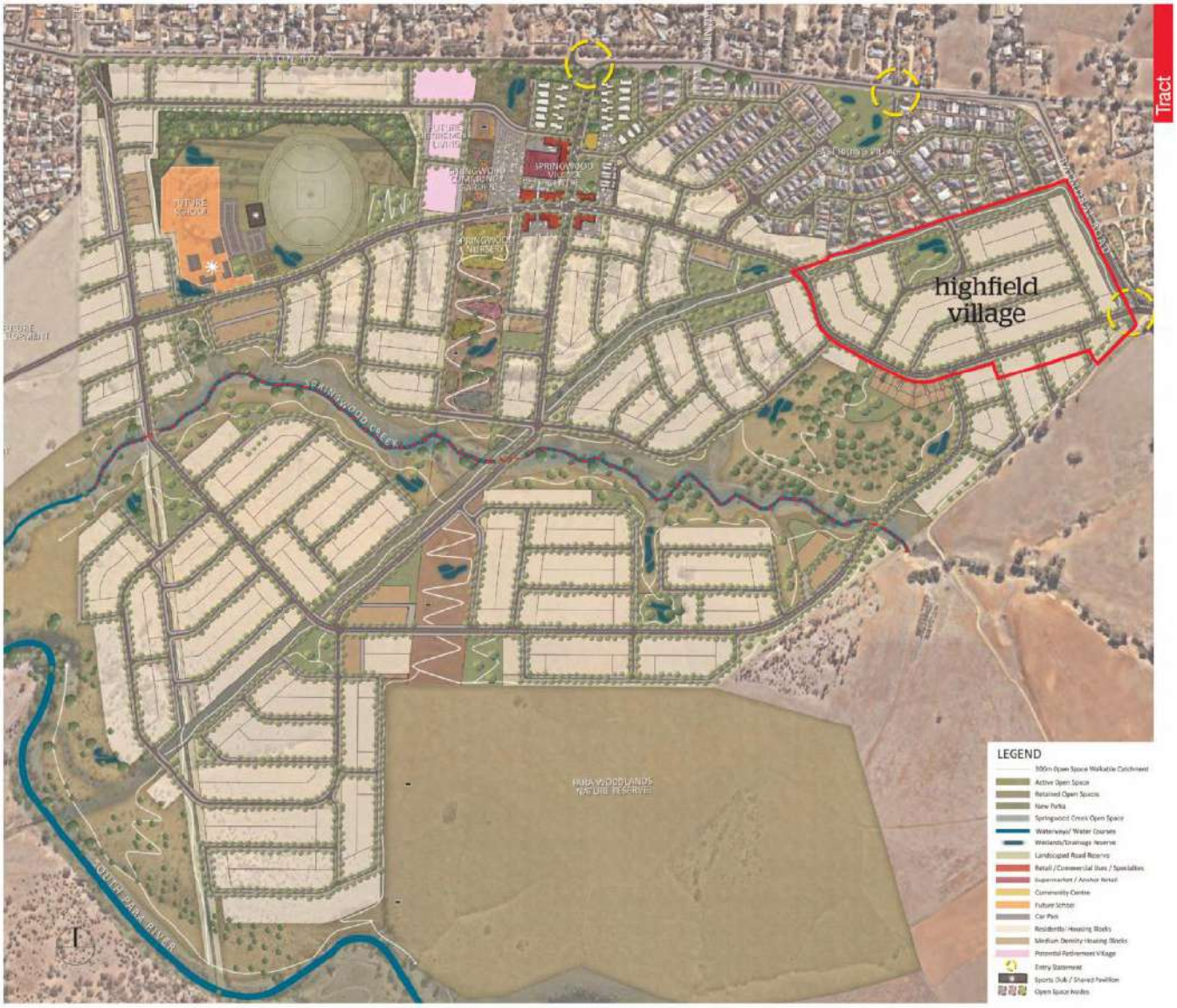
# 1. Landscape Concept

## for Highfield Village

*'Key areas for future development'*

## Master Plan

- ***End of street vistas to open space*** and landscape features and roads adjacent open space.
- ***Lots with good solar orientation*** maximised.
- ***Off road shared path network*** linking open space and community destinations with surrounding network.
- ***Connections and access to community facilities***, e.g. bus access to schools and consideration for school drop off/ pick up.
- ***Strong connections*** between district open space, schools, town centre and conservation.
- ***Wetlands and waterways*** located in response to existing topography to avoid excessive cut and fill.
- ***Linear reserve*** providing tree retention and connections to open space reserves.



## *Highfield Village*

- Options for ***multiple access*** into the precinct, through existing stages, and Balmoral Road.
- ***Diverse housing*** options, through standard residential widths or larger frontage blocks, up to 1000m².
- ***Wetland feature*** in the central park, emphasising water treatment through information signs and community interaction.
- ***Central park*** to attract residents, featuring play structures and open space.
- ***Shared path links*** along the easement, connecting into future stages and providing for a larger, linear kick about space.
- Initially, a ***connection into the existing stages*** of the development (through a gullet crossing) which will link vehicles and pedestrians to explore the area.
- One of the ***flattest areas*** to be developed, and has the least amount of constraints.
- Additional landscaping of roads (16m reserve) allows for ***wider verges*** and more generous street tree planting and canopy cover.

## Movement Network: Road

- 20m Connector Road
- 16m Local Road
- 14m Access Road
- 12.5m Access Edge Road

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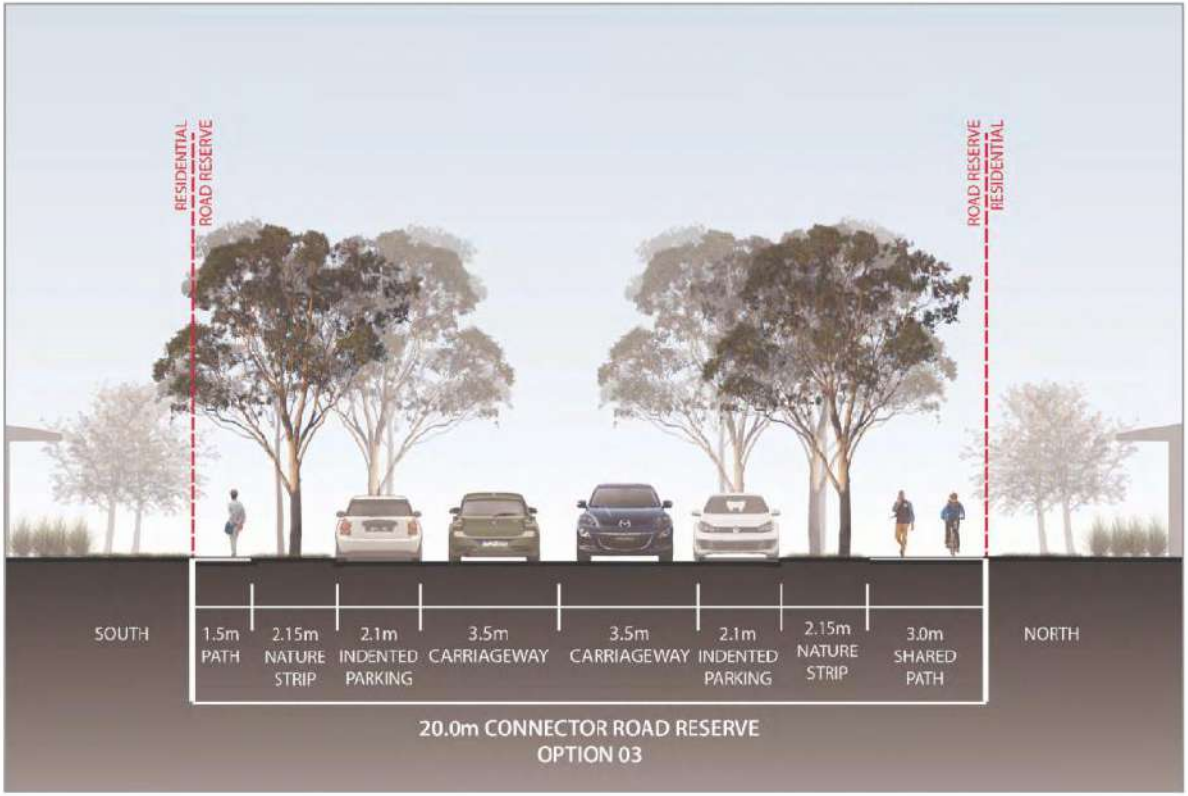
# 20m Connector Road

- Connector Road linking into the proposed GELR further to the West
- Proposed cycle/shared path needs to correspond to GELR proposal
- Kerb outstands to embellish the project entry from Balmoral Road
- Wider verge on shared path side to aid in visibility of cyclists/ pedestrians when reversing out of driveways

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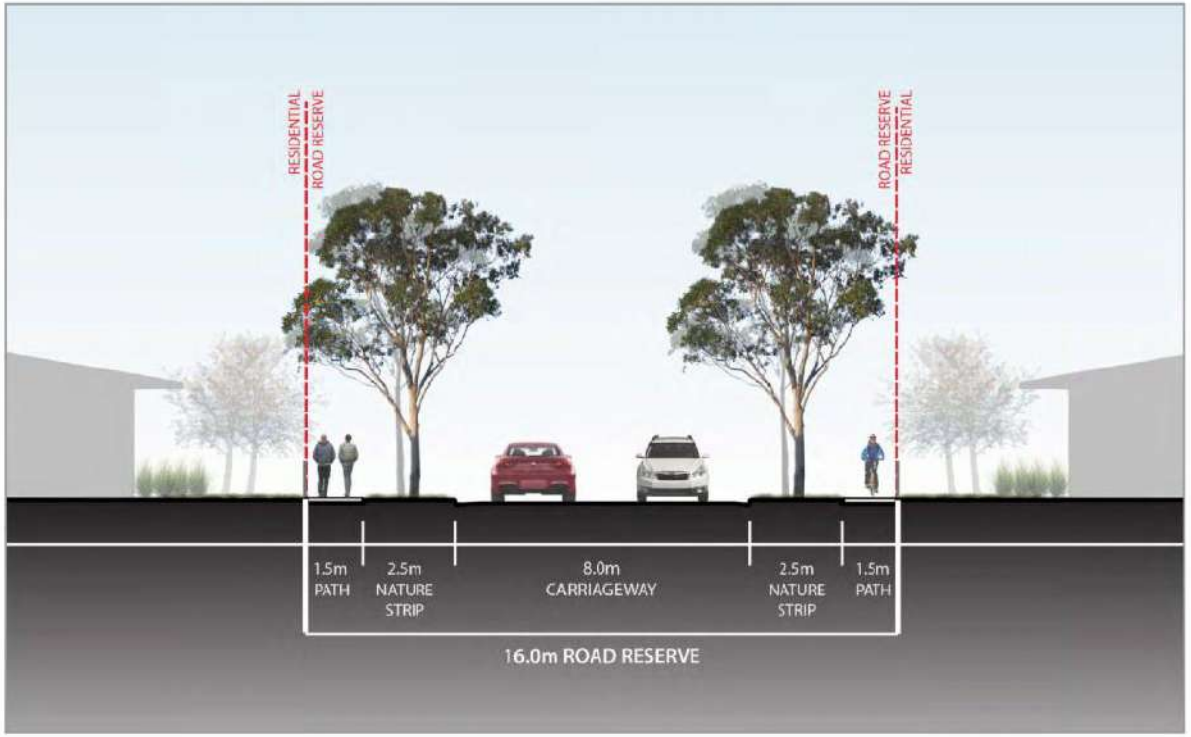
# 16m Access Road

- 16m Road Reserve allows for wider verges and an increased point of difference between the new stages and the existing development
- 7.5m carriageway allows for a safer and slightly more relaxed driving experience



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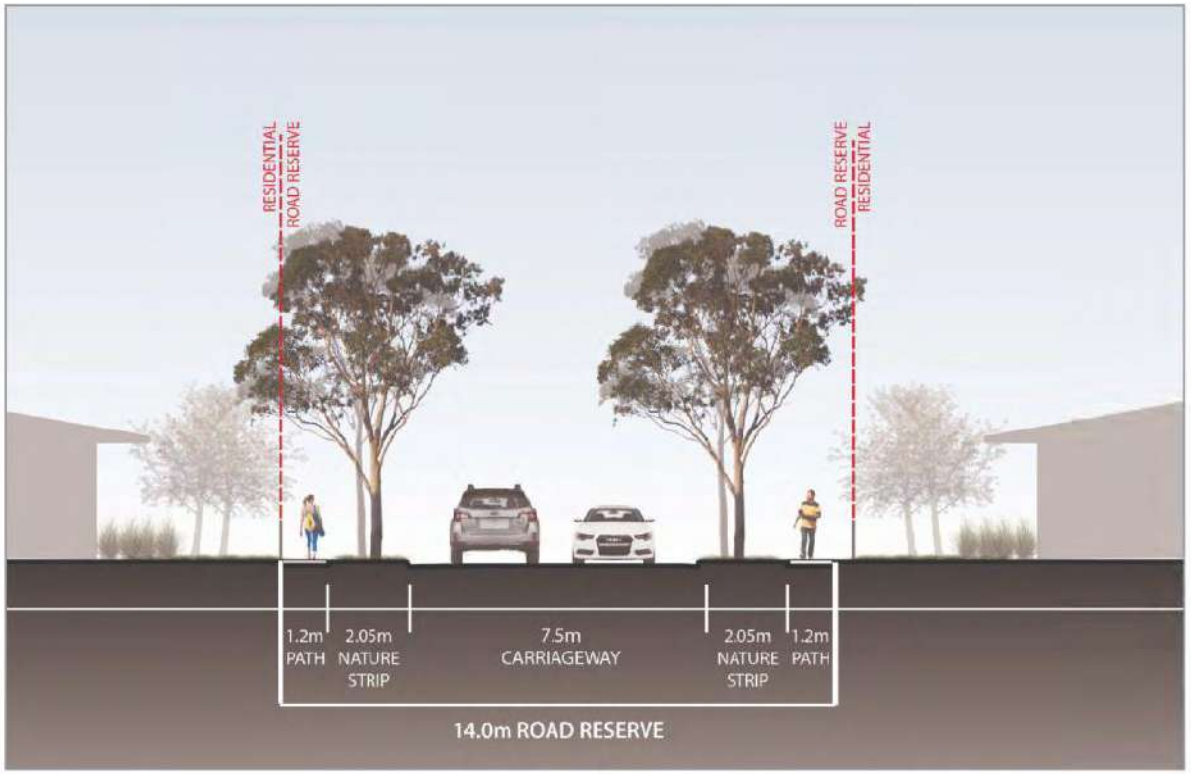
# 14m Access Road

- Standard 14m Road Reserve, with 1.2m footpaths on both sides of the road connecting residents to closely located amenities
- 7.5m carriageway allows for a safer and slightly more relaxed driving experience



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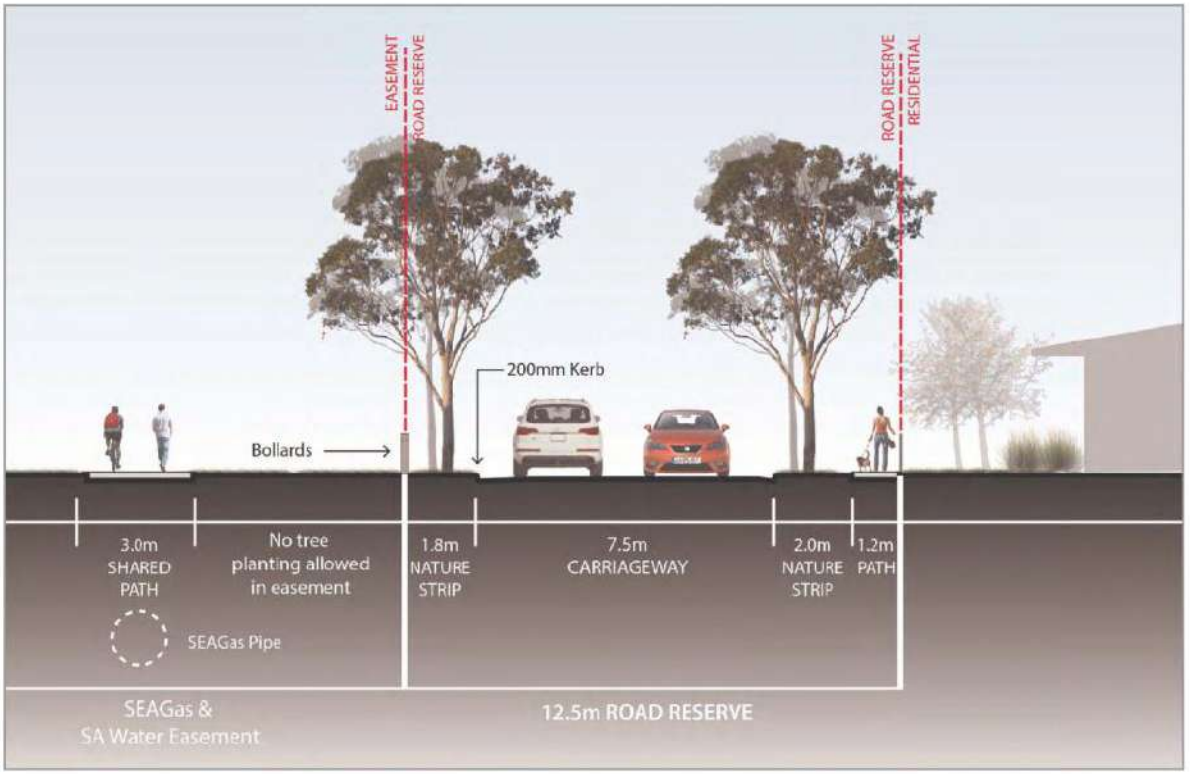
# 12.5m Access Edge Road

- 12.5m Edge Road Reserve allows for planting on both sides of the road (in order to mitigate easement 'no tree planting' requirements
- 7.5m carriageway allows for a safer and slightly more relaxed driving experience
- Utility and local governenment authorities will have will access the reserve the shared use path for maintenance access via the use of locked, removable bollards



## Movement Network: Pedestrian & Cycle

- 3.0m Shared Path (on road)
- 3.0m Shared Path (off road)
- SA Water Pipe Pedestrian Crossing
- Pedestrian Link Footpath

- All 16m roads have a 1.5m footpath on both sides of the road
- All 14m access roads have a 1.2m footpath on both sides of the road
- All 12.5m access edge roads have a 1.2m footpath on the residential side of the road
- The 20m connector road has a 3m shared path on the north side of the road reserve, and a 1.5m footpath on the south side of the reserve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# Balmoral Road Interface

The Balmoral Road interfaces incorporates a number of key design elements, to knit into the existing and proposed development.

It presents a non-standard rear fence design to improve the amenity of Balmoral Road.

It incorporates a shared use path along it's length to link future and existing residents together along a development wide path network.

The interface responds to the SEA Gas easement, and planting restrictions within the pipeline alignment, in addition to providing additional street tree planting to Balmoral Road, outside of the easement.

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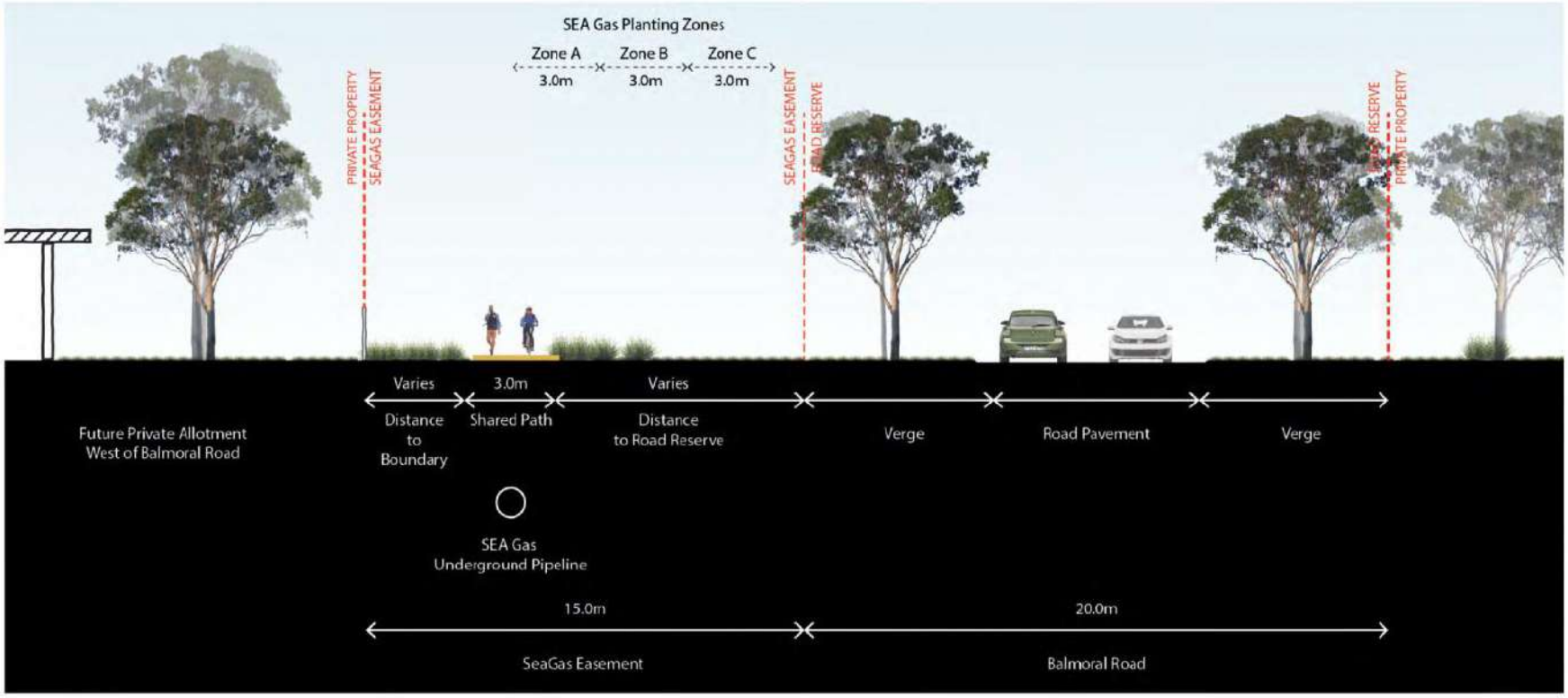


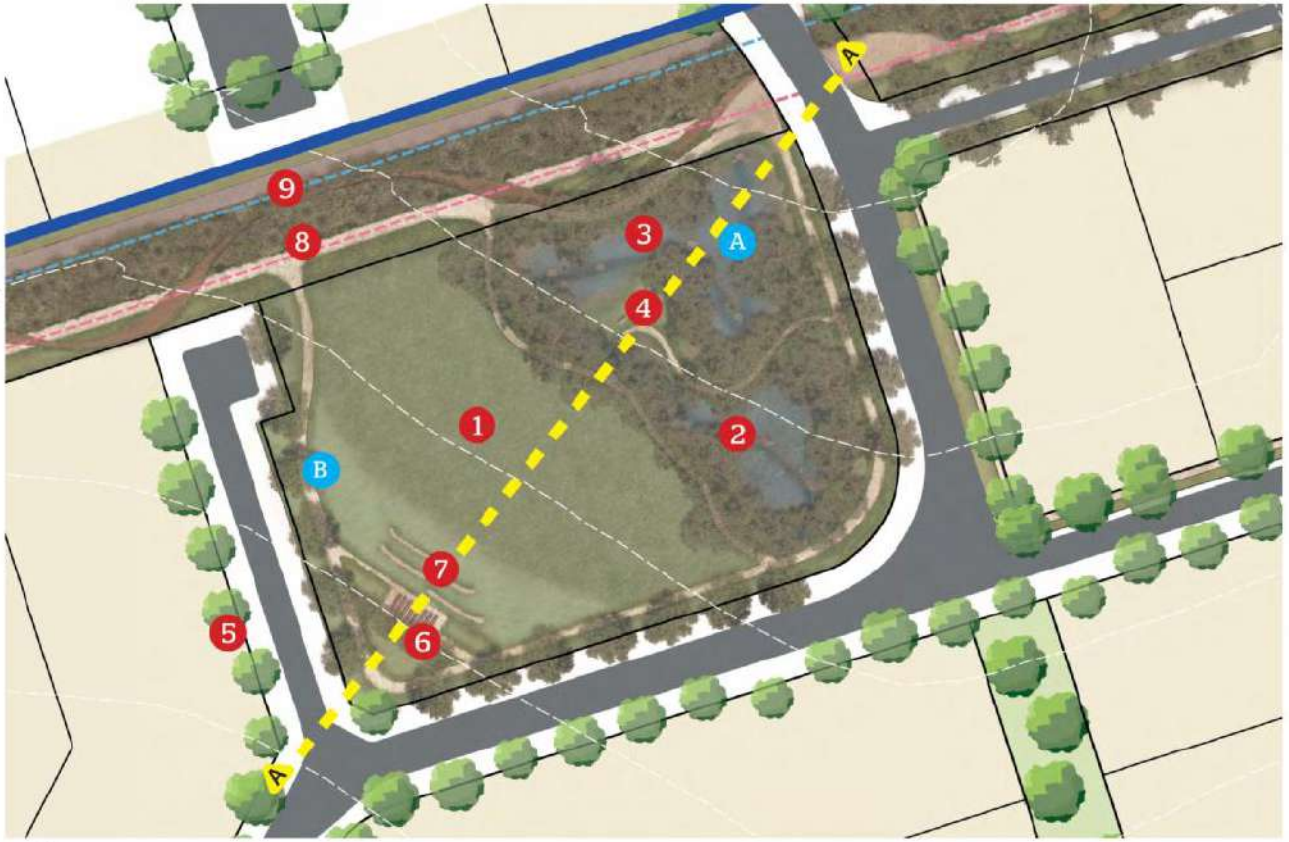
Tract

# Highfield Park Concept

1. Kickabout / oval space
2. Planted swale with rock feature to take low flow rain events
3. Overflow and detention area for water treatment
4. Natural based play elements themed to the creek line and river.
5. Street Tree Planting
6. Highfield signature arbors and picnic facilities situated at the high point of the reserve.
7. Tiered seating steps to hill area with view over reserve
8. SEAGAS pipe, underground
9. SAWATER trunk main, above ground

A. Eucalyptus porosa mallee box woodland planting themes to swale and adjacent wetland areas, with riparian species as required for water quality.

B. General parkland planting pallete using high amenity, drought tolerant species.

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Tract

# Highfield Park Features

### Kick About & Picnic

**Key Features**

- Integrated into the surrounds
- Large area of irrigated turf

Contours of the site have been manipulated to create a large flat area of turf, this will complement the natural play space and creates a space for ball games, unstructured play and community events.

### Nature Play

**Key Features**

- Integrated into the wetland and
- Natural and unstructured play elements

Play equipment will be a mix of structured and unstructured, with traditional play items such as swings, nets and forts integrated into the more natural elements. The creek and wetland offers significant amenity and unstructured play opportunity.

A variety of logs, rocks, planting and decking will provide spaces for imagination based play, with opportunities for climbing, balance and running. The concept will not rely solely on structured play and single use pieces of equipment as per a traditional playground, instead encouraging children to make up their own games and interpret the sites features into imagination based play.

Tract

# Highfield Park Features

### Wetland and Creek/ Stormwater management

A key feature of the reserve will be the wetland and swales used to manage stormwater form the development In collabrartion with the engineering team, the wetland will be shaped to provide maxiumum amenity to the community whilst serving to reduce in and improve the water quality discharged from the site.

The wetland will be integrated into the nature play elenmnsts to form an unstructured play opportunity for older children. A path will meander along the edge of the wetland, creating a picturesque walk through the reserve and linking the kick about, play space, picnic area and terraced seating.

### Picnic and terraces

**Key Features**

- A 'hillview' signature shelter/ arbor structure utilising materials and forms of the stage one reserve design in a new way.
- Using the natural topography to create a vantage point and natural overlook over the reserve and wetland.

A shelter and picnic area will be created at the apex aof the reserve, taking advantage of the natural topgraphy of the site. Large informal terraces will link the kickabout area with the picnic area., offering park users a vantage pint to sit view the reserve, or as fitness training opportunity.

## Linear Reserve

1. Above ground trunk water main
2. Shared use path along the SEAGAS pipe alignment. (Seagas pipe shown as pink dashed line)
3. Informal crossing to trunk main using tiered seating steps and a sculptural viewing platform. (SAWater trunk main indicated by blue dashed line
4. Mounding and land art feature to ground plane, using a mix of local stone and mounded planting to create a serpentine, undulating landform along the creek. This land art will intensify at crossing points and reserves to reinfoce wayfinding.
5. Linear park signature arbour to provide shade and a vertical reference point. These will be used throughout the linear reserves to provide amenity to users and landmarks to assist wayfinding.

A. SEAGAS approved species to SEAGAS easment

B. SA WATER approved species to SA WATER easement