

DRAFT - FOR EARLY COMMENCEMENT

# River Murray Flood Resilience Code Amendment

Chief Executive, Department for Trade and Investment

Initiated 24 May 2023

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Adopted for early commencement by:



**Hon Nick Champion MP**

Minister for Planning

23/6/23

	Name / Title	Date	Signature
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## HAVE YOUR SAY

This draft Code Amendment is on community engagement from 29 June 2023 to 25 August 2023.

During this time you are welcome to lodge a written submission about any of the changes proposed in this draft Code Amendment.

Submissions can be made:

- online at [plan.sa.gov.au/en/codeamendments](https://plan.sa.gov.au/en/codeamendments)
- at YourSay at <https://yoursay.sa.gov.au>
- by email to [plansasubmissions@sa.gov.au](mailto:plansasubmissions@sa.gov.au)  
with subject "Submission – Draft River Murray Flood Resilience Draft Code Amendment"
- by post mailed to:  
*Code Amendment Team  
Planning and Land Use Services Division  
Department for Trade and Investment  
GPO Box 1815, Adelaide SA 5001*

A public information session will be held at 6.30pm online on 18 July 2023.

Further details on in person and online sessions can be found at YourSay <https://yoursay.sa.gov.au>

Questions regarding the draft Code Amendment can be directed to the PlanSA Service Desk on 1800 752 664 or [plansa@sa.gov.au](mailto:plansa@sa.gov.au)

## 1. WHAT IS THE PLANNING AND DESIGN CODE?

The Planning and Design Code (the Code) sets out the rules that determine what landowners can do on their land.

For instance, if you want to build a house, the Code rules will tell you how high you can build and how far back from the front of your land your house will need to be positioned. The Code will also tell you if any additional rules apply to the area where your land is located. For example, you might be in a high bushfire risk area or an area with specific rules about protecting native vegetation.

### 1.1. Planning and Design Code Framework

The Code is based on a framework that contains various elements called overlays, zones, sub zones and general development policies. Together these elements provide all the rules that apply to a particular parcel of land.

### 1.2. Overlays

Overlays contain policies and maps that show the location and extent of special land features or sensitivities, such as heritage places or areas of high bushfire risk.

They may apply across one or more zones. Overlays are intended to be applied in conjunction with the relevant zone. However, where policy in a zone conflicts with the policy in an overlay, the overlay policy trumps the zone policy.

### 1.3. Zones

Zones are areas that share common land uses and in which specific types of development are permitted. Zones are the main element of the Code and will be applied consistently across the state.

For example, a Township Zone for Andamooka can be expected to apply to similar townships like Carrieton. Each zone includes information (called classification tables) that describes the types of development that are permitted in that zone and how they will be assessed.

### 1.4. Subzones

Subzones enable variation to policy within a zone, which may reflect local characteristics. An example is Port Adelaide centre, which has many different characteristics to typical shopping centres due to its maritime activities and uses.

### 1.5. General Development Policies

General development policies outline functional requirements for development, such as the need for car parking or wastewater management. While zones determine what development can occur in an area, general development policies provide guidance on how development should occur.

### 1.6. Amending the Planning and Design Code

*The Planning, Development and Infrastructure Act 2016* (the Act) provides the legislative framework for undertaking amendments to the Code. With approval of the Minister for Planning (the Minister) the Chief Executive of the Department for Trade and Investment (the

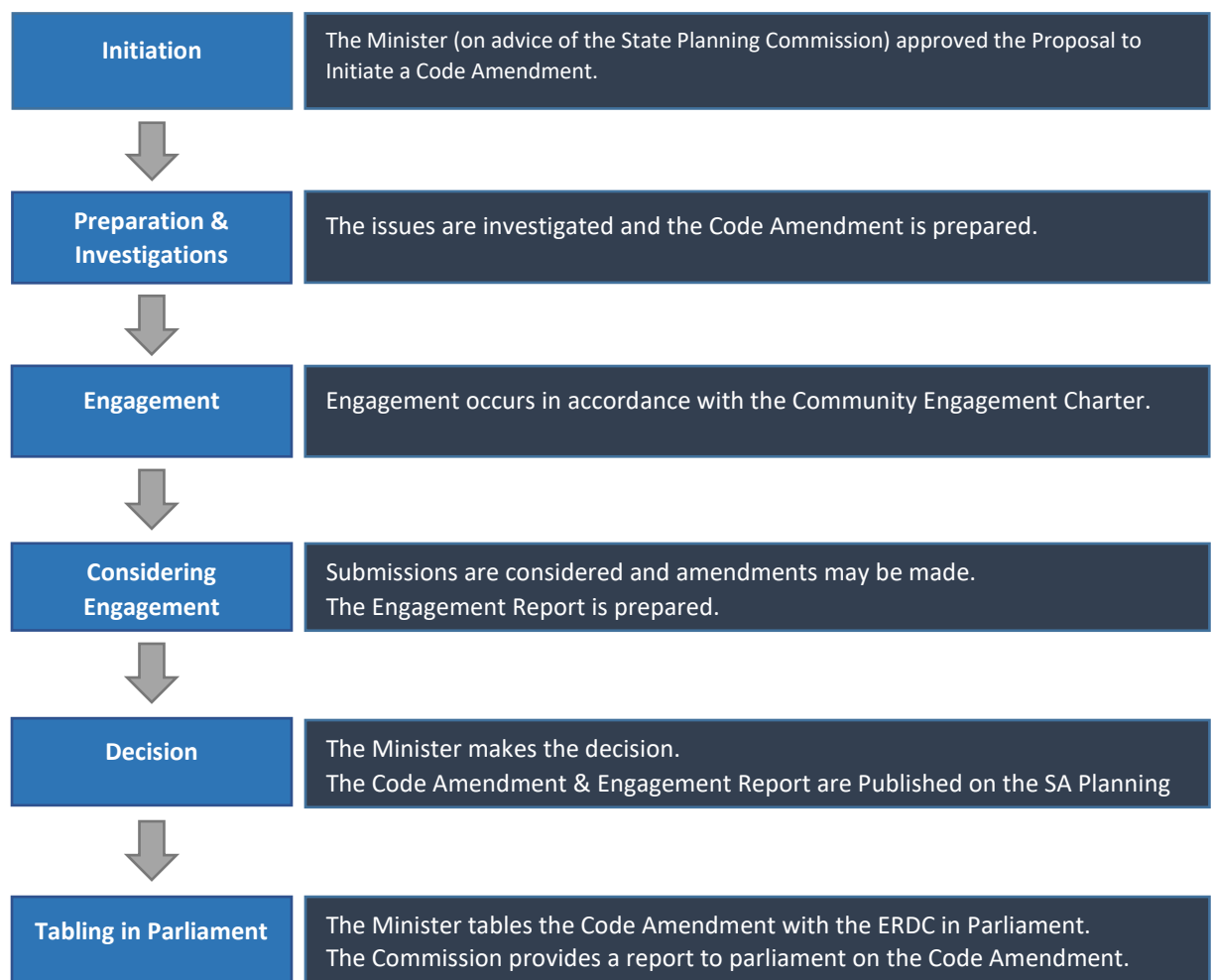
Department), a Council, Joint Planning Board, Government Agency, or private proponent may initiate an amendment to the Code and undertake a Code Amendment process.

The River Murray Flood Resilience Code Amendment by the Chief Executive of the Department was initiated on 24 May 2023.

An approved Proposal to Initiate defines the scope of an Amendment and prescribes the investigations which must occur to enable an assessment of whether the Code Amendment should take place and in what form. A copy of the Proposal to Initiate for the River Murray Flood Resilience Code Amendment can be downloaded from [https://plan.sa.gov.au/have\\_your\\_say/general\\_consultations](https://plan.sa.gov.au/have_your_say/general_consultations)

The State Planning Commission (the Commission) is responsible under the Act for ensuring the Code is maintained, reflects contemporary values relevant to planning, and readily responds to emerging trends and issues.

The Commission provided independent advice to the Minister for Planning on the Proposal to initiate this draft Code Amendment.



## 2. WHAT IS PROPOSED IN THIS CODE AMENDMENT?

### 2.1. Need for the Code Amendment

In mid-2022 unprecedented rainfall in the eastern states on already heavily saturated catchments led to the significant flooding of the River Murray. By December 2022, the waters had reached South Australia (SA), causing widespread floods through the Murraylands and Riverlands.

It is estimated that 220 gigalitres flowed into SA at the peak of the flood. Many of the levees along the River Murray (private and public) were breached in early 2023, causing additional inland flooding.

State Government modelling estimates approximately 3200 holiday shacks and permanent dwellings were inundated, with the majority requiring complete rebuild or significant repair.

In addition to dwellings, there is also the loss of much needed irrigation and agricultural infrastructure such as pump houses and sheds. The regions impacted by the floods are lucrative primary producing areas which experienced significant damage to fruit orchards, vineyards, grain and livestock. Not to mention the riverbank, public open space, roads, footpaths and other public infrastructure.

While the South Australian State Government has already implemented mechanisms to help the impacted regions to commence their recovery process through various monetary disaster relief packages, there are additional ways in which it can help rebuild the Murraylands and Riverlands regions, providing clearer guidance to both permanent and holiday homeowners to rebuild their houses in a manner more resilient to future hazard risk.

In early February 2023, the Hon. Nick Champion, Minister for Planning, initiated a Flood Recovery Housing Round Table with a focus on working with the building and development sector to understand and address challenges for the rebuild effort. Discussions at the Round Table will continue as River Murray communities rebuild.

The Department for Trade and Investment – Planning and Land Use Services (PLUS) is the primary custodian of the State's planning system. PLUS, has worked alongside the Department for Environment and Water (DEW) and councils impacted by the floods to identify how the Code could be improved to assist in mitigating future flood risk as the impacted communities begin rebuilding.

A range of planning policy amendments have been identified to provide better guidance for impacted communities to rebuild more flood-resilient development. These amendments will provide:

- transparent and accessible finished floor levels that should be adopted to avoid inundation in future flood events using data and modelling regarding Australian Height Datum (AHD) levels reached by the 2022/23 flood waters in towns & settlements.
- provide greater flexibility in building height allowances (this involves review of current policy that seeks to restrict building height above ground level for amenity purposes)
- update policy regarding building materials (what is and isn't 'removeable' in the event of flood) and underfloor structures (how these should / shouldn't be designed for flood resilience purposes), and
- update policy regarding design techniques and building materials for underfloor structures.
- streamline assessment pathways for sheds, outbuildings and ancillary buildings.
- identify established shack settlements to be rezoned to Rural Shack Settlement Zone.



The proposed draft Code Amendment will investigate and implement these identified policy amendments.

## **2.2. Affected Area**

The proposal seeks to investigate amending the Code for some or all of the Affected Area, being land and water that generally lies within the external boundaries of the River Murray Flood Plain Protection Area Overlay in the Code mapping, as shown in the map in Attachment A. As noted in the initiation document, there is scope to consider a broader Affected Area to land that adjoins the Overlay, if required.

The Affected Area traverses the following Council areas:

- Mid-Murray Council
- The District Council of Loxton-Waikerie
- Renmark-Paringa Council
- The Berri-Barmera Council
- The Rural City of Murray Bridge
- Coorong District Council
- Alexandrina Council
- District Council of Karoonda East Murray

## **2.3. Summary of proposed policy changes**

### **2.3.1. Current Code Policy**

The Affected Area is identified to be located in the following Zones, Subzones, and Overlays in the Code.

#### Zones

- Conservation
- Caravan and Tourist Park
- Rural
- Rural Shack Settlement
- Infrastructure (Ferry and Marina Facilities)
- Rural Horticulture
- Tourism Development
- Rural Living
- Business Neighbourhood

#### Sub – Zones

- Waterfront
- Bookmark Creek
- River Murray Experience
- Visitor Experience

## Overlays

- River Murray Flood Plain Protection Area
- Hazards (Flooding- General)
- Hazards (Flooding – Evidence Required)
- Limited Land Division
- Murray- Darling Basin Overlay
- River Murray Tributaries Protection Area Overlay
- Ramsar Wetlands Overlay
- Prescribed Water Resources Overlay
- Water Resources Overlay
- Prescribed Watercourses Overlay

The existing Code policies which apply to the Affected Area are extensive given the breadth of the geographical area. Therefore, it is impractical to list the entire content of the Overlays and Zones.

The River Murray Flood Plain Protection Area Overlay and Rural Shack Settlement Zone are the two key pieces of planning policy being considered in this draft Code Amendment. The spatial application of the Rural Shack Settlement Zone, the Conservation Zone and the Rural Zone is also being considered.

Current policy is available for viewing via the [‘Browse the Planning & Design Code’](#) page of the SA Planning Portal.

### **River Murray Flood Plain Protection Area Overlay**

The River Murray Flood Plain Protection Area Overlay applies along the extent of the River Murray corridor within South Australia and includes areas captured within the River Murray 1956 Flood Level and the River Murray Water Protection Area.

The intent of the Overlay is primarily to conserve and protect water quality and the riverine environment, the provision for environmental water flows, the protection of life and property against flood risk, and recognition of the riverine environment as an important ecological, tourist and recreational resource. Additionally, the Overlay also seeks to enable the facilitation of development for the purpose of recreation (e.g. landings, jetties, houseboat moorings) water extraction, wetland management and irrigation management (e.g. channel, pumping stand, flood gate).

### **Rural Shack Settlement Zone**

The Rural Shack Settlement Zone applies to a number of locations along the River Murray corridor and in coastal settings across the State, generally capturing established shack settlements.

This zone seeks to enable limited development within environments where natural processes such as flooding, sea-level rise, sand drift and erosion occur. It also seeks that the natural environment be protected from inappropriate development and existing development be upgraded to incorporate environmental improvements.

### **Conservation Zone**

The Conservation Zone applies broadly across the State and generally captures areas that include high value natural features (national parks, native vegetation, wetlands, etc.) or areas subject to significant environmental risk.

This Zone intends to conserve and enhance the natural environment and natural ecological processes for their ability to reduce the effects of climate change, for their historic, scientific, landscape, habitat, biodiversity, carbon storage and cultural values and enable the provision of opportunities for the public to experience these through low-impact recreational and tourism development.

### **Rural Zone**

The Rural Zone applies across the State supporting the economic prosperity of South Australia primarily through the production, processing, storage and distribution of primary produce, forestry and the generation of energy from renewable sources. It supports the diversification of existing businesses that promote value-adding such as industry, storage and warehousing activities, the sale and consumption of primary produce, tourist development and accommodation.

## **2.3.2. Proposed Code Policy**

The proposed policy changes are informed by the analysis and investigations set out in section 4 and 5 of this document. This draft Code Amendment proposes to amend:

- The policy, procedural matters (referrals) and spatial application of the River Murray Flood Plain Protection Area Overlay,
- The policy and spatial application of the Rural Shack Settlement Zone,
- The policy and spatial application of the Conservation Zone, and
- The policy and spatial application of the Rural Zone.

Based on a full review of the Code Library (i.e. all of the policies within the Code) and consideration of the surrounding context, the following amendments are proposed.

RIVER MURRAY FLOOD PLAIN PROTECTION AREA OVERLAY	
Planning and Design Code Reference	Purpose of the amendment
<b>DTS/DPF 1.1</b>	Include reference to holding tanks as being an acceptable form of wastewater management
<b>PO 5.1</b>	Include reference to flood mitigation and the potential for character impacts.
<b>DTS/DPF 5.1</b>	Amend elevated finished floor level height criteria and include a maximum upper building level height.
<b>DTS/DPF 5.2</b>	Amend to include reference to sites with a direct river frontage to enable a deemed to satisfy pathway, and reference to a diagram.
<b>PO 6.1</b>	Include reference to caravan and tourist parks
<b>DTS/DPF 6.1</b>	<p>Introduce policy that links to specific values via Technical and Numeric Variations specifying that development should incorporate a finished floor level at least 300mm above the height of a 1% AEP flood event.</p> <p>Include additional policy which limits the height of elevated finished floor levels regardless of 1% AEP height and seeks that habitable buildings and structures in a caravan park be relocatable.</p>
<b>PO 6.2</b>	Include reference to the river and riverine environment.
<b>DTS/DPF 6.3</b>	Include additional policy criteria which relates to the design of additions to existing single storey dwellings and the design of undercroft storage areas.
<b>DTS/DPF 6.4</b>	Delete reference to 'removable panels'.
<b>Procedural Matters – Referral to Minister responsible for administration of the <i>River Murray Act 2003</i>.</b>	Delete reference to 'removable panels' within the exemptions from requiring a referral for the design of sheds, garages outbuildings, agricultural buildings and undercroft areas of elevated dwellings.
<b>Figures and Diagrams</b>	Inclusion of four new diagrams to assist interpretation of new flood mitigation policies, relating to building height and undercroft design, two examples of

	undercroft design configurations and siting of outbuildings.
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RURAL SHACK SETTLEMENT ZONE	
Planning and Design Code Reference	Purpose of the amendment
<b>PO 6.1</b>	Include reference to waterfront properties.
<b>DTS/DPF 6.1</b>	Include reference to sites with a direct river frontage to enable a DTS pathway for ancillary buildings.
<b>Table 1 - Accepted Development – Carport</b>	Include reference to sites with a direct river frontage to enable a DTS pathway.
<b>Table 1 - Accepted Development – Outbuilding</b>	Include reference to sites with a direct river frontage to enable for a DTS pathway.

Technical and Numerical Variations: section 66(4) of the *Planning Development and Infrastructure Act 2016* (the 'Act') provides that the Code may include provisions that provide for the adaptation of the rules that apply to account for local variations in appropriate circumstances (referred to within the Code as 'Technical and Numerical Variations (TNV's). This draft Code Amendment proposes to introduce additional and updated TNVs in the River Murray Flood Plain Protection Area Overlay.

The proposed policy changes are shown in Attachment B.

### 3. WHAT ARE THE NEXT STEPS FOR THIS CODE AMENDMENT?

#### 3.1. Early Commencement

This draft Code Amendment will commence operation on an interim basis on 29 June 2023 under section 78 of the Act. As a result, the policies being proposed in this draft Code Amendment will apply for 12 months from the date of commencement, or until they are adopted (or otherwise) by the Minister.

This process is used when the Minister considers that the immediate application of the policy changes is necessary in the interests of orderly and proper development and to counter applications for undesirable development ahead of the outcome of consideration of this draft Code Amendment by the Minister.

#### 3.2. Community Engagement

Community engagement on the draft Code Amendment must comply with the Community Engagement Charter (the Charter), as required under the Act. The Charter sets out the following principles for engagement:

- engagement is genuine
- engagement is inclusive and respectful

- engagement is fit for purpose
- engagement is informed and transparent
- engagement processes are reviewed and improved.

An Engagement Plan has been prepared for this draft Code Amendment to ensure that engagement will be conducted and measured against the principles of the Charter. For more information on the Community Engagement Charter go to the SA Planning Portal at ([www.plan.sa.gov.au](http://www.plan.sa.gov.au)).

Engagement will be undertaken over an 8-week period commencing on 29 June 2023 and concluding on 24 August 2023. A summary of the engagement activities proposed for this draft Code Amendment is provided below:

The following stakeholders will receive direct correspondence (letter or email) inviting them to provide feedback on the draft Code Amendment:

- Councils, State Agencies, Members of Parliament and Utility Providers
  - Mid-Murray Council
  - The District Council of Loxton-Waikerie
  - Renmark-Paringa Council
  - The Berri-Barmera Council
  - The Rural City of Murray Bridge
  - Coorong District Council
  - Alexandrina Council
  - District Council of Karoonda East Murray
  - Murraylands and Riverlands Landscape Board
  - Attorney-General's Department - Aboriginal Affairs and Reconciliation
  - Department for Environment and Water
  - Department for Infrastructure and Transport
  - Department of Primary Industries and Regions
  - Environment Protection Authority
  - Department for Health and Wellbeing
  - South Australian Housing Authority
  - SA Tourism Commission
  - SafeWork SA
  - Security, Emergency and Recovery Management - Department of the Premier and Cabinet
  - South Australian Fire and Emergency Services Commission
  - SA State Emergency Service
  - Federal and State Members of Parliament for the electorates in which the proposed draft Code Amendment applies

- SA Water
  - South Australian Power Network
  - Murraylands and Riverlands LGA
  - Local Government Association of South Australia
  - Landowners of affected properties
  - Planning Institute of Australia South Australia Division
  - Master Builders Association
  - Housing Industry Association
  - Urban Development Institute Australia
  - Property Council
  - Irrigations Trust
    - Renmark Irrigation Trust
    - Central Irrigation Trust
    - SA Murray Irrigators
    - Lower Murray Private Irrigators Association
  - Relevant 'shack owner' associations and organisations
  - Primary Producers SA and affiliates:
    - Almond Board of Australia
    - South Australian Wine Industry Association Incorporated
    - SA Dairy Farmers Association Inc
    - Riverland Wine
    - Citrus SA
  - Business SA
  - Regional Development Australia Murraylands and Riverlands
  - SA Parks
  - South Australian Government Financing Authority
  - Insurance Council of Australia
- Targeted engagement activities that will occur throughout the community engagement period will include:
    - Online information session for Councils and Elected Members
    - Online information session for State Agencies
    - Online public information
      - Drop-in Sessions will be held during the community engagement phase at local venues in the Murraylands and Riverlands. The precise dates and times of these sessions will be published on the SA Planning Portal. Existing on-line

and print mediums will also be used to announce and promote the draft Code Amendment.

- The wider community will be invited to provide feedback on the proposed draft Code Amendment. Engagement with the community will occur in the following ways:
  - Publication of the proposed Code Amendment on the SA Planning Portal.
  - Publication of the proposed Code Amendment on the YourSay website.
- Engagement with any person or body specified by the Commission under section 73(6)(e) of the Act.

An Engagement Report will be prepared following a review of all the submissions received, summarising all written and verbal representations, suggesting responses to the issues raised and, if necessary, recommended changes to the draft Code Amendment

### 3.3. How can I have my say on the Code Amendment?

There are several ways in which you can provide feedback on the draft Code Amendment.

Submissions can be made:

- By completing an online submission via the SA Planning Portal at [plan.sa.gov.au/en/codeamendments](http://plan.sa.gov.au/en/codeamendments)
- By completing an online submission via YourSay Website at <https://yoursay.sa.gov.au>
- by providing a written submission by email to [plansasubmissions@sa.gov.au](mailto:plansasubmissions@sa.gov.au) with subject "Submission – River Murray Flood Resilience Draft Code Amendment"
- by post mailed to:

*Code Amendment Team  
Planning and Land Use Services Division  
Department for Trade and Investment  
GPO Box 1815, Adelaide SA 5001*

### 3.4. What changes to the Draft Code Amendment can my feedback influence?

Feedback received through engagement can influence the draft Code Amendment in the following ways:

- Policy content and the spatial application of the River Murray Flood Plain Protection Area Overlay;
- Spatial application of the Rural Shack Settlement Zone; and
- The spatial application and numerical value of technical and numeric variations.

Aspects of the amendment which stakeholders and the community cannot influence are:

- The policies and wording contained in the General Modules of the Planning and Design Code.



Feedback cannot influence instruments which are separate to the Code, such as the Act and its associated regulations.

### **3.5. What will happen with my feedback?**

The Chief Executive is committed to undertaking community engagement in accordance with the principles of the Community Engagement Charter and is genuinely open to considering the issues identified in submissions on the draft Code Amendment.

All formal submissions will be considered by the Chief Executive when determining whether the proposed Amendment is suitable and whether any changes should be made.

Each submission will be entered into a register and will be receipted via email acknowledging your submission. Your submission will be published on the SA Planning Portal. Personal addresses, email and phone numbers will not be published; however, company details will be.

The Chief Executive will consider the feedback received in finalising the draft Code Amendment and will prepare an Engagement Report which will outline what was heard during community engagement and how the proposed draft Code Amendment was changed in response to submissions.

The Engagement Report will be forwarded to the Minister, and then published on the SA Planning Portal along with a copy of the submissions received.

### **3.6. Decision on the Draft Code Amendment**

Once the Engagement Report is provided to the Minister, the Commission may provide further advice to the Minister, at the Minister's request, if the draft Code Amendment is considered significant.

The Minister will then either adopt the draft Code Amendment (with or without changes) or determine that the draft Code Amendment should not proceed. The Minister's decision will then be published on the SA Planning portal.

If adopted, the Code Amendment will be referred to the Environment Resources and Development Committee of Parliament (ERDC) for their review. The Commission will also provide the Committee with a report on the Code Amendment, including the engagement undertaken on the draft Code Amendment and its compliance with the Community Engagement Charter.

## **4. ANALYSIS**

### **4.1. Strategic Planning Outcomes**

#### **4.1.1. Summary of Strategic Planning Outcomes**

##### **Infrastructure and services**

Consideration has been given to wastewater infrastructure requirements for rebuilt dwellings and associated approval processes under the *Public Health Act 2011* to ensure alignment with proposed planning policy amendments and any instalment or

reinstalment of such systems is done to mitigate the impacts of similar flood events in a sustainable way

### **Environmental impacts**

An analysis has been undertaken on potential environmental impacts resulting from amending planning policy requirements for rebuilding of dwellings or other structures. This included, but was not limited to matters such as native vegetation, biodiversity, water quality of the River Murray, its estuaries and/or surrounding land. This analysis was undertaken in collaboration with senior staff from the Department of Environment and Water.

### **Visual impacts**

An analysis has been undertaken regarding the potential for visual amenity impacts along the River Murray corridor and riverine environment that could potentially result from amending planning policies for maximum building heights, finished floor levels and design and materiality of undercroft areas of dwellings.

### **Mitigation of the Impacts of Hazards**

An analysis was undertaken on the location and number of dwellings and buildings impacted, the peak height levels of the flood waters and the extent of the flood waters using recently sourced data and other information provided by the Department for Premier and Cabinet (DPC), State Emergency Service (SES) and the Department for Environment and Water DEW.

Using the outputs of the above analysis, new and updated finished floor levels (FFL) were able to be identified along with new building heights, design techniques for the external treatment of the undercroft area of buildings, new area dimensions for non-habitable rooms in undercroft areas and siting for new sheds in relation to dwelling location and the river.

The combination of cross government data sharing and input from impacted councils enabled a thorough understanding of both the direct and indirect impacts of the flood event. This resulted in the identification of new and updated statutory planning controls that will build more resilient communities, reduce future flood risk and in some cases avoid future risk.

This information will also be used to inform future regional planning along the River Murray.

## **4.1.2. Consistency with the State Planning Policies**

State Planning Policies define South Australia's planning priorities, goals and interests. They are the overarching umbrella policies that define the state's interests in land use. There are 16 State Planning Policies and six special legislative State Planning Policies.

These policies are given effect through the Code, with referral powers assigned to relevant Government Agencies (for example, the Environmental Protection Agency for contaminated land). The Code (including any Code Amendments) must comply with any planning principle prescribed by a State Planning Policy.

This draft Code Amendment is considered to be consistent with the State Planning Policies as shown in Attachment C.

#### 4.1.3. Consistency with the Regional Plan

The directions set out in Regional Plans provide the long-term vision and set the spatial patterns for future development within a region. This can include land use integration, transport infrastructure and the public realm.

The Commission has identified that the existing volumes of the South Australian Planning Strategy, prepared under the *Development Act 1993*, will apply until such time as the new Regional Plans are prepared and adopted. Refer to the SA Planning Portal for more information on the Commission's program for implementing Regional Plans throughout South Australia.

Where there is conflict between a Regional Plan and the State Planning Policies, the State Planning Policies will prevail.

This draft Code Amendment is considered to be consistent with the Regional Plan as shown in Attachment C.

#### 4.1.4. Consistency with other key strategic policy documents

This draft Code Amendment aligns with other key policy documents in the following manner:

Other Relevant Documents	Code Amendment Alignment with Other Relevant Documents
<p><b>Stronger Together - South Australia's Disaster Resilience Strategy (2019)</b></p> <p>The Strategy (led by South Australian Fire and Emergency Services Commission (SAFECOM) provides a foundation upon which state and local governments, non-government organisations, businesses, and communities can work together to build resilience and make South Australia a safer place.</p> <p>The Strategy also focusses on building the capability of emergency services and other emergency management organisations.</p> <p><b>National Disaster Risk Reduction Framework 2018</b></p> <p>The National Disaster Risk Reduction Framework is a multisector collaboration led by the National Resilience Taskforce within the Australian Government Department of Home Affairs.</p> <p>The Framework guides national, whole-of-society efforts to proactively reduce</p>	<p>This draft Code Amendment proposes to introduce updated, contemporary policies to respond to the recorded flood levels and other learnings of the recent River Murray flood event. The policies will assist in better protecting rebuilt dwellings or other new development from the impacts of future flooding.</p> <p>This thereby assists in addressing a likely increase in extreme weather events in future due to the impacts of Climate Change.</p> <p>It generally aligns with Australian Government strategies and frameworks about preparing for disasters from natural hazards.</p>

disaster risk in order to minimise the loss and suffering caused by disasters from natural hazards.

### **Australian Disaster Preparedness Framework 2018**

This document describes the Australian Disaster Preparedness Framework and its seven components. It outlines the principles that underpin national preparedness and defines what constitutes preparedness capabilities for severe to catastrophic for disasters. Importantly, the document provides guidelines that can be used by all jurisdictions to inform the development of capability across Australia to prepare for and manage severe to catastrophic disasters.

### **South Australian Flood Hazard Plan (2021)**

The purpose of the Flood Hazard Plan is to set out arrangements and provide information for effective, efficient and coordinated flood management in South Australia. It includes State government flood management priorities for the coming years.

The primary audience for the Flood Hazard Plan is the State Emergency Management Committee (SEMC), the emergency management sector, other relevant State Agencies, local councils, local government authorities and boards as well as the broader general public.

### **South Australian Government Climate Change Action Plan 2021–2025**

The Action Plan sets out how the South Australian government will deliver on its climate smart policy directions and emissions reduction goals over the next five years.

It describes government-led objectives and actions to help to build a strong, climate smart economy, further reduce greenhouse gas emissions, and support South Australia to adapt to a changing climate.

## 4.2. Investigations

### 4.2.1. Investigations Undertaken

The extent of investigations that have been undertaken as part of the Code Amendment process have been agreed by the Minister in the Proposal to Initiate.

The following investigations have been undertaken to inform this Code Amendment:

Investigations Undertaken	Summary of Scope of Investigations	Key Outcomes / Recommendations from Investigations
River Murray Flood Planning and Building Group	<p>Meetings were held between PLUS and senior staff of impacted Councils, along with representatives from the Department for Environment and Water, Murraylands and Riverlands Landscape Board and the Environment Protection Authority from February to June 2023.</p> <p>The purpose of these meetings was to discuss potential amendments to the Code and PDI Regulations which would assist with the recovery and minimise impacts from a future flood event in a way that embeds the learnings from the recent flood event.</p> <p>The Chief Executive Officer of the Murraylands and Riverlands Local Government Association attended the first meeting held in February 2023.</p>	The group discussed the key issues facing the rebuilding of dwellings and other structures and the priority policy amendments that may be required to ensure better flood resilience for an equivalent flood in future.
Review and compile statistics and data on impacts of the flood event	<p>Working closely with the Flood Recovery Program led by the Department for Premier and Cabinet (DPC) combined with data from the State Emergency Services (SES) to define the specific impacts of the flood event, such as:</p> <ul style="list-style-type: none"> <li>• numbers of dwellings and buildings affected;</li> <li>• locations of affected properties; and</li> <li>• tenure and uses of properties (freehold versus leasehold/Crown ownership and permanent residences versus holiday use).</li> </ul>	Data collected from Department of the Premier and Cabinet (DPC) and Department for Environment and Water informed the understanding of the extent of the flooding, flood peak heights and the extent of the flood.
Spatially identifying the horizontal extent of the recent flood event	Mapping data from the SES regarding the height reached by the flood waters in the recent event was obtained and assisted in developing the new mapping discussed below.	Data collected from the Department for Environment and Water informed the understanding the horizontal extent of the flooding.
Identification of Finished Floor Levels (FFLs) in Australian Height Datum metres (AHD)	<p>The proposed introduction of FFLs in AHD in certain areas along the River has been developed working closely with DEW which provided flood data and modelling for this purpose.</p> <p>The modelling that has informed the draft Code Amendment mapping is intended to provide the estimated peak levels during a 1% Annual</p>	FFLs are modelled to be above a 1% AEP flood event (except where exceeding 4m above ground level in which case 4m is

	<p>Exceedance Probability (AEP) flood event (commonly also referred to as a 1 in 100 year event).</p> <p>An additional 300mm 'freeboard' was added to the estimated peak levels as per existing Code policy.</p> <p>The modelling was undertaken based on flow rates being:</p> <ul style="list-style-type: none"> <li>• 250 GL/day to locations upstream of and including Blanchetown (Lock 1). 250GL/day flow is an approximation of the flows predicted to be experienced in a 1% AEP event along this stretch of the River</li> <li>• 230 GL/day to locations downstream of Blanchetown (Lock 1) where recorded flow rates were generally lesser at monitoring sites in the recent event.</li> </ul> <p>DEW has calculated interpolated levels that will be reached by flood waters for these modelled flows.</p> <p>The above policy regime aligns to the existing relevant policy in the Code which seeks this same outcome (but which generally does not currently provide actual heights to be met, putting the onus on an applicant or relevant authority to source these for a particular site from historical information if it exists or determine them through investigation).</p> <p>It is noted that there are certain locations upstream of Lock 1 at Blanchetown where elevating a building above the modelled level may become impractical due to the extreme height that a 1% AEP flood event would reach (e.g. in the magnitude of up to 5m above natural ground level).</p> <p>As such the draft Code Amendment includes a proposed 4m dwelling elevation 'cap'. The aim of this is to strike a balance between:</p> <ul style="list-style-type: none"> <li>• the benefit of mitigating against risk of inundation in a flood event and</li> <li>• protection of amenity through dwellings not being built excessively high and not requiring excessive (or unachievable) engineering requirements.</li> </ul> <p>Ultimately, the policies will enable some discretion (through a performance assessment) for a relevant authority to assess each application on a case by case basis taking into account relevant site and locality characteristics, visual amenity and other flood mitigation measures in a proposal.</p>	the maximum level required for elevation).
Selection of Areas Where the Modelled TNVs Apply	<p>The following summarises the approach taken to identify the areas to which the above-mentioned modelled flood levels are proposed by the draft Code Amendment to be reflected in TNV mapping.</p> <ul style="list-style-type: none"> <li>• the scope of area was the entire length of the River from the SA eastern state border to the River's entrance to Lake Alexandrina.</li> <li>• only areas within the extent of the River Murray Flood Plain Protection Area Overlay boundaries were considered for a TNV. Two minor exceptions were identified at</li> </ul>	Spatial application of new minimum FFLs in AHD metres in selected residential, shack and other urban areas and zones the length of the river up to the entrance to the Lower Lakes.

	<p>Cobdogla and Mannum where the recent flood impacted areas outside of the Overlay boundary.</p> <ul style="list-style-type: none"> <li>portions of urban type zones that intersected the horizontal extent of the recent flood (or were in close proximity to the flood extent) were chosen. In addition, many established shack areas in the Conservation Zone and Rural Zone, which were either impacted by the flood or deemed to be at risk of a similar future flood were identified to receive the TNVs (e.g. Greenbanks, Sunnyside, Willowbanks and many others).</li> <li>SES recorded damage data was utilised to assist inform areas clearly impacted by the recent flood.</li> <li>existing FFL polygons already in the Code (which are based upon 1956 Flood levels) were left untouched and retained in the mapping.</li> <li>AHD values calculated by the DEW model were then applied to the FFL polygons which were closest to a River Murray kilometre (km) marker in front of the polygon.</li> <li>TNV polygons were then refined by removing areas clearly considered to be beyond the reach of a 1% flood event (e.g. land elevated above a cliff and the like).</li> </ul>	
Design and materiality of undercroft areas of buildings	<p>Through researching the learning of the recent flood event on different examples of design relating to undercroft areas of buildings and looking at other interstate or overseas jurisdictions for best practice in design for flood resilience.</p>	<p>PLUS have determined that the policy in relation to undercroft areas of elevated dwellings requires significant amendments. The policy amendments include:</p> <ul style="list-style-type: none"> <li>increasing the maximum storage area criteria;</li> <li>the design of undercroft areas and the use of removable panels/doors;</li> <li>interaction between the planning policies and the BCA in respect to undercroft enclosures.</li> </ul>
Application Pathways	<p>Current assessment pathways were reviewed to enable new development to have as streamlined an assessment pathway as possible taking into account necessary checks and balances.</p>	<p>The Accepted and Deemed-to-Satisfy assessment pathways for ancillary structures within the Rural Shack Settlement Zone can be amended to enable streamlined assessment pathways for simple developments.</p>

<p>Review of River Murray flood mitigation planning Technical Report (2015)</p>	<p>Review of flood risk investigation (2015) which was conducted by the Department of Environment, Water and Natural Resources in conjunction with Renmark Paringa Council and the State Emergency Service.</p>	<p>The project components undertaken in this report were:</p> <ul style="list-style-type: none"> <li>• Updated flood modelling and mapping</li> <li>• Flood frequency analysis to determine the likelihood of flooding</li> <li>• Flood consequence assessment</li> <li>• spatial analysis to produce a GIS layer of levee bank information.</li> </ul> <p><i>Flood Modelling and Mapping</i></p> <p>Updated flood modelling was undertaken to prepare flood inundation maps for the SA portion of the River Murray</p> <p>The following flows were included in this technical study:</p> <ul style="list-style-type: none"> <li>• 130 000 ML/d</li> <li>• 200 000 ML/d and 250 000 ML/d</li> <li>• 341 000 ML/d</li> </ul> <p>Flood mapping was undertaken which showed the inundation that could be expected at these flows.</p> <p>The analysis concluded that the 1 in 100 AEP event has a flow rate of 226 000 ML/d, while the 1956 event was estimated to have an AEP of 1 in 250.</p>
<p>Consideration of requirements of existing Land Management Agreements</p>	<p>Investigate and review whether the proposed new Code policy will result in conflicts with requirements expressed within existing Land Management Agreements (LMAs).</p>	<p>The existing LMAs have principally been developed so as to manage the clearance of native vegetation, ensure wastewater systems do not result in pollution and control the siting of built form so as to minimise amenity and character impacts upon the river corridor.</p> <p>The proposed new policy is considered to be compatible with the intent of the LMAs. However, it is clear that the proposed policy will be at</p>



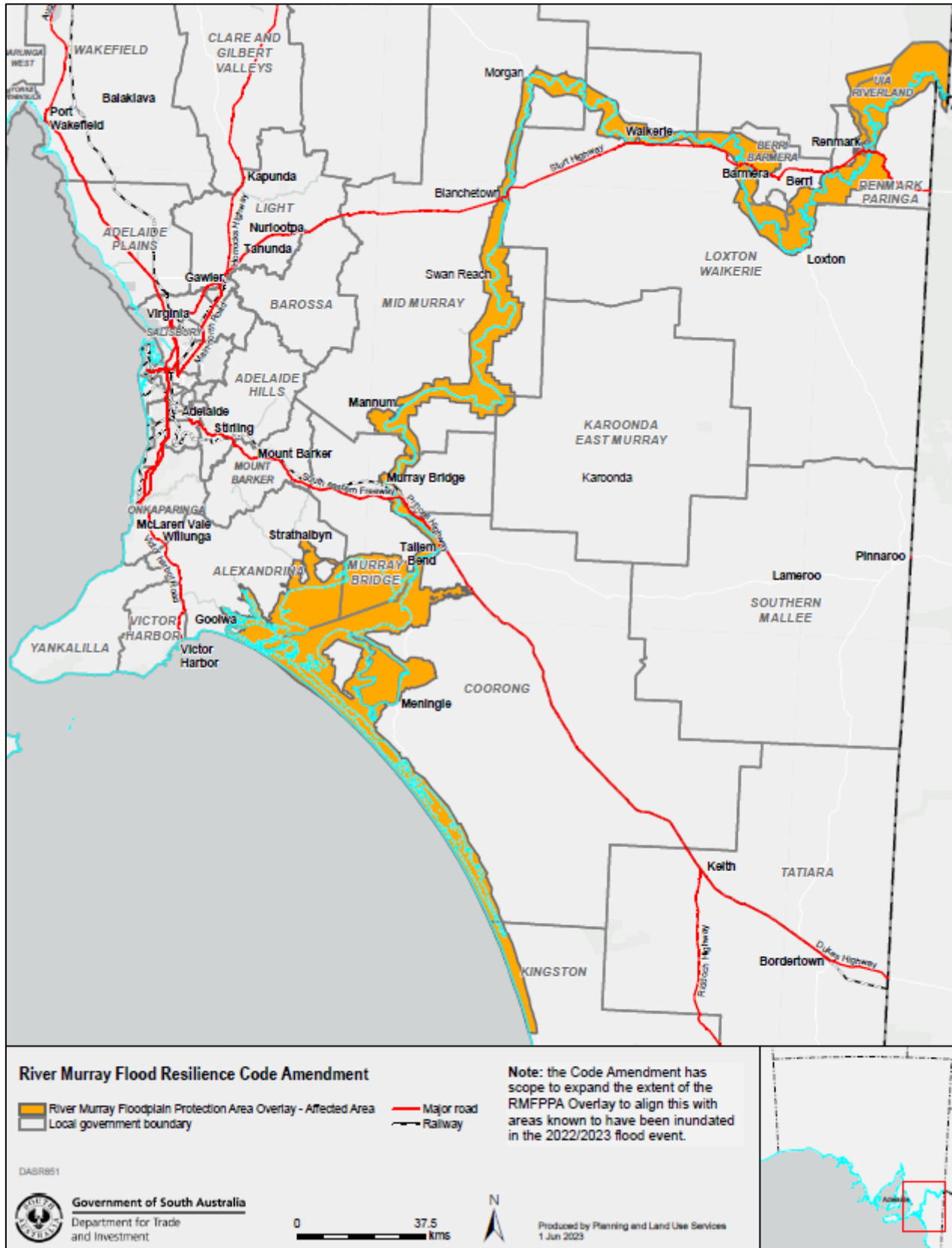
		<p>odds with setback and siting criteria expressed within a number of State Government managed LMAs</p> <p>Certain developments will need to be accompanied by written requests seeking to waive specific LMA criteria, where at odds with new policies of the Planning and Design Code.</p>
Insurance Implications	<p>During preparation of the draft Code Amendment, discussions were held with the Insurance Council of Australia and the South Australian Government Financing Authority.</p> <p>Whilst it cannot be definitively said due to the varying operations of different insurance companies and products available, it is generally the case that insurance providers will give strong consideration to the proposed new policies in this draft Code Amendment as part of its assessment process in resolving claims to rebuild or repair buildings and property which was damaged or destroyed during the recent floods.</p> <p>Landowners will be encouraged to discuss these matters directly with their insurer through communication materials accompanying the Code Amendment.</p>	<p>It is important to consider the financial and other impacts of the proposed planning policy amendments on landowners affected by the flood event, and ensuring a responsible response to the flood event of ensuring better resilience of rebuilt buildings whilst also balancing the practical impacts upon the river communities.</p> <p>It is considered that the Code Amendment has been drafted with this lens and seeks such a balance, however continuous examination of these issues should occur during and post the community engagement process with continued dialog with the insurance industry, building industry and other bodies.</p>

Further details on investigations undertaken in support of the Code Amendment are included in Attachment D.

## 5. REFERENCES

1. Updated Mapping / Data References in relation to TNV's
2. Bloss C, Eckert G, Cetin L, Department of Environment and Natural Resources, *River Murray Flood Mitigation Planning: Assessment of Flood Consequences (2015)*, available online via: <https://www.waterconnect.sa.gov.au/Content/Publications/DEW/DEWNR-TR-2015-56.pdf>
3. North Central Catchment Authority, *North Central Flood Plain Management Strategy (Victoria)(2018)*, available online via: [https://www.nccma.vic.gov.au/sites/default/files/publications/nc\\_rfms\\_-\\_final\\_for\\_web.pdf](https://www.nccma.vic.gov.au/sites/default/files/publications/nc_rfms_-_final_for_web.pdf)

## ATTACHMENT A – AFFECTED AREA MAP



## ATTACHMENT B – PROPOSED CODE POLICY

### Drafting Notes:

~~Red-strikethrough~~ = delete text

Green text = new text

### Part 3 - Overlays

#### River Murray Flood Plain Protection Area Overlay

#### Assessment Provisions (AP)

#### Desired Outcome (DO)

Desired Outcome	
DO 1	Conservation and protection of water quality and the riverine environment, provision for environmental water flows, the protection of life and property against flood risk, and recognition of the riverine environment as an important ecological, tourist and recreational resource.
DO 2	Development for the purpose of recreation (e.g. landings, jetties, houseboat moorings) water extraction, wetland management and irrigation management (e.g. channel, pumping stand, flood gate).

#### Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Land Use	
<p>PO 1.1</p> <p>All development, but in particular development involving any of the following:</p> <ul style="list-style-type: none"> <li>(a) activities requiring irrigation</li> <li>(b) aquaculture</li> <li>(c) commercial forestry</li> <li>(d) horse keeping</li> <li>(e) horticulture</li> <li>(f) industry</li> <li>(g) intensive animal husbandry</li> </ul> <p>has a lawful, sustainable and reliable water supply that does not place undue strain on water resources in prescribed water resource areas.</p>	<p>DTS/DPF 1.1</p> <p>Development satisfies either of the following:</p> <ul style="list-style-type: none"> <li>(a) the applicant has a current water licence in which sufficient spare capacity exists to accommodate the water needs of the proposed use</li> <li>or</li> <li>(b) the proposal does not involve the taking of water for which a licence would be required under the Landscape South Australia Act 2019.</li> </ul>
Wastewater	
<p>PO 2.1</p> <p>Wastewater management systems result in a neutral or beneficial effect on the quality of water draining from the site.</p>	<p>DTS/DPF 2.1</p> <p>Development results in:</p> <ul style="list-style-type: none"> <li>(a) a building or land use that is currently connected to an existing on-site wastewater system that is non-compliant with relevant South Australian standards being connected to a new or upgraded system that complies with such standards</li> <li>or</li> </ul>

	(b) an existing on-site wastewater system being decommissioned and wastewater being disposed of to a sewer, <del>or</del> community wastewater management system <b>or wastewater holding tank</b> that complies with relevant South Australian standards.
Dredging	
PO 3.1 Development is designed and sited in a manner that limits the need for dredging.	DTS/DPF 3.1 None are applicable.
Land Division	
PO 4.1 Land division does not lead to intensification of development.	DTS/DPF 4.1 Land division is: (a) limited to the creation of a public road or a public reserve or (b) for adjustment of allotment boundaries to remove an anomaly in the current boundaries with respect to the location of existing buildings or structures and does not result in an additional allotment.
PO 4.2 Boundary realignment for residential purposes preserves the integrity of public waterfront reserves.	DTS/DPF 4.2 Boundary realignment for residential purposes: (a) locates any new roads on the landward side of an existing dwelling (rather than between an existing dwelling and the public waterfront reserve) (b) provides a reserve 50m or more in width above pool level along the water frontage.
Built Form and Character	
PO 5.1 <b>In the context of any measures required to mitigate against flood risk, Buildings and structures</b> are sited and designed to be unobtrusive, <b>particularly</b> when viewed from the River Murray and nearby public roads.	DTS/DPF 5.1 <b>Buildings <del>and structures</del>:</b> (a) do not exceed one building level in height (excluding elevation to minimise the potential for personal or property damage as a result of a flood) (b) <b>in accordance with Figure 5:</b> (i) have no floor level elevated <del>2.5m</del> <b>3m</b> or more above <b>natural</b> ground level <b>other than where the Finished Ground and Floor Levels Technical and Numeric Variation layer applies and would require the Minimum finished floor level of the building to be greater than 3m above natural ground level, but is not greater than 4m above natural ground level as required by DTS/DPF 6.1(a)</b> (ii) have an overall roof height that does not <b>exceed 4m above the elevated floor level described in DTS 5.1(b)(i).</b> (c) are not closer than 50m to the waterfront (d) have associated electricity and telecommunications lines installed underground

	(e) in relation to outbuildings and agricultural buildings clad in sheet metal - are pre-colour treated or painted in a non-reflective colour.											
PO 5.2 Outbuildings and agricultural buildings designed and sited to minimise their visibility from the waterfront and <del>do</del> not dominate the appearance of public places.	DTS/DPF 5.2 Outbuildings and agricultural buildings:  (a) clad in sheet metal are pre-colour treated or painted in a non-reflective colour- (b) in the case of a site with a waterfront (including where there is an intervening public reserve), are not sited between the waterfront and the existing or proposed dwelling as demonstrated in Figure 7.											
PO 5.3 Development setback from canals to establish a consistent character along a river front.	DTS/DPF 5.3 None are applicable.											
PO 5.4 Limited use of retaining walls in the 1956 River Murray Flood Plain and in highly visible locations that can be viewed from public roads or the main channel of the River Murray to maintain the natural amenity and character along the river.	DTS/DPF 5.4 A retaining wall for one or more of the following purposes: (a) for the repair or replacement of a lawful retaining wall (b) to provide safe public access to the waterfront on public land (c) to protect structures and buildings of historic significance (d) to protect waterfront vegetation (e) is ancillary to a dwelling and will provide safe access to the waterfront from that dwelling (f) to protect a dwelling from material risk presented by erosion.											
Flood Resilience												
PO 6.1 Habitable and other valuable buildings that may be adversely affected by floodwaters and fluctuating pool levels are elevated (or relocatable in the case of caravan and tourist parks) to protect property from damage.	DTS/DPF 6.1 Development incorporates finished ground and floor levels not less than the following, except where: (a) it would require a finished floor level greater than 4m above natural ground level in which case 4m is the maximum finished floor level; or (b) it relates to habitable buildings within a caravan or tourist park which will be relocatable in the event of a flood: <table border="1"><thead><tr><th>Finished Ground and Floor Levels</th></tr></thead><tbody><tr><td><b>Drafting Note:</b> Existing TNVs are not shown for clarity but will be retained.</td></tr><tr><td>Minimum finished floor level is 1.87m AHD</td></tr><tr><td>Minimum finished floor level is 2.18m AHD</td></tr><tr><td>Minimum finished floor level is 2.26m AHD</td></tr><tr><td>Minimum finished floor level is 2.57m AHD</td></tr><tr><td>Minimum finished floor level is 2.59m AHD</td></tr><tr><td>Minimum finished floor level is 2.68m AHD</td></tr><tr><td>Minimum finished floor level is 2.76m AHD</td></tr><tr><td>Minimum finished floor level is 2.8m AHD</td></tr><tr><td>Minimum finished floor level is 2.88m AHD</td></tr></tbody></table>	Finished Ground and Floor Levels	<b>Drafting Note:</b> Existing TNVs are not shown for clarity but will be retained.	Minimum finished floor level is 1.87m AHD	Minimum finished floor level is 2.18m AHD	Minimum finished floor level is 2.26m AHD	Minimum finished floor level is 2.57m AHD	Minimum finished floor level is 2.59m AHD	Minimum finished floor level is 2.68m AHD	Minimum finished floor level is 2.76m AHD	Minimum finished floor level is 2.8m AHD	Minimum finished floor level is 2.88m AHD
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	Minimum finished floor level is 4.75m AHD
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Minimum finished floor level is 11.8m AHD
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Minimum finished floor level is 13.18m AHD
Minimum finished floor level is 13.26m AHD
Minimum finished floor level is 13.88m AHD
Minimum finished floor level is 15.73m AHD
Minimum finished floor level is 15.74m AHD
Minimum finished floor level is 16.19m AHD
Minimum finished floor level is 16.21m AHD
Minimum finished floor level is 16.23m AHD
Minimum finished floor level is 17m AHD
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Minimum finished floor level is 17.05m AHD
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Minimum finished floor level is 17.58m AHD
Minimum finished floor level is 19.13m AHD
Minimum finished floor level is 19.23m AHD
Minimum finished floor level is 19.42m AHD
Minimum finished floor level is 19.47m AHD

In instances where no finished floor level value is specified, development incorporates a finished floor level at least 300mm above the height of a 1% AEP flood event except where:

- (a) it would require a finished floor level greater than 4m above natural ground level in which case 4m is the maximum finished floor level; or
- (b) it relates to habitable buildings and structures within a caravan or tourist park which will be relocatable in the event of a flood.

- ~~(a) the top of the kerb level of the primary street or~~
- ~~(b) natural ground level where there is no kerb or~~
- ~~(c) the height of a 1% AEP flood event~~

~~whichever is the greater.~~



<p>PO 6.2 Development avoids the need for coast <b>and river</b> protection works through measures such as setbacks to protect development from coastal erosion, sea, <del>or river or</del> stormwater flooding, sand drift or other coastal <b>or riverine</b> processes.</p>	<p>DTS/DPF 6.2 None are applicable.</p>
<p>PO 6.3 Dwellings and dwelling additions or alterations: (a) do not impede floodwaters and fluctuating pool levels (b) are designed and sited to mitigate against damage in the event of a flood.</p>	<p>DTS/DPF 6.3 Dwellings and additions or alterations to dwellings satisfy (a) or (b) <b>and (c)</b>: (a) are located outside the 1956 River Murray Flood Plain <b>as shown in the Planning Reference layer in the South Australian Property and Planning Atlas</b> (b) are elevated and the undercroft area:     (i) is wholly open (there are no enclosures) or     (ii) <b>where enclosed areas are proposed, such areas are in accordance with all of the following <del>incorporates an enclosure within the undercroft in accordance with all the following,</del> as depicted in Figures 5 and 6:</b>         A. there are no habitable rooms         B. each enclosed space <b>does not include internal linings (excluding wet areas) and is fitted with roller door(s) or similar on each side of a width not less than 2.4m <del>is formed by roller doors, removable panels or other measures that so the space can be easily opened or removed</del></b> during times of flood         C. <b>does not include more than one wet area and that wet area does not exceed 15m<sup>2</sup></b>         D. the <del>total</del> combined enclosed area (inclusive of a wet area) <b>does not <del>or will not</del> exceed 15m<sup>2</sup> a total floor area of 60m<sup>2</sup></b>         E. <b>at least one third of the undercroft area remains open (not enclosed) from the principal waterfront elevation through to its opposite elevation.</b> (c) <b>in the case of an existing dwelling with a habitable floor level at ground level, alterations and additions do not:</b>     (i) <b>increase the total floor area of the dwelling to greater than 90 square metres, excluding:</b>         A. wet areas of up to 15 square metres, and         B. any verandah, balcony or deck     (ii) <b>comprise the addition of a second building level.</b></p>



PO 6.4 Outbuildings and agricultural buildings do not impede floodwaters and fluctuating pool levels.	DTS/DPF 6.4 Outbuildings and agricultural buildings are: (a) fitted with roller doors, <del>removable panels</del> or similar on two opposite ends or sides (whichever elevations face the direction of the river flow) (b) constructed at natural ground level.
PO 6.5 Fencing does not impede floodwaters and fluctuating pool levels.	DTS/DPF 6.5 Fencing is of an open design such as post and wire strand construction.
Environmental Protection	
PO 7.1 Adverse impacts on the natural features and stability of the waterfront are minimised.	DTS/DPF 7.1 None are applicable.
PO 7.2 Development incorporates buffer areas to protect the river and associated natural features such as wetlands and native vegetation.	DTS/DPF 7.2 None are applicable.
PO 7.3 Modification to the natural landform, including land reclamation, is avoided or minimised to prevent impacts on natural features, natural flow paths, floodwaters and the stability of the waterfront.	DTS/DPF 7.3 None are applicable.
PO 7.4 Fuel storage facilities and areas, including areas for the storage of mobile fuel trailers, are sited and designed to prevent environmental harm.	DTS/DPF 7.4 Fuel storage facilities and areas, including areas for the storage of mobile fuel trailers, are located: (a) outside the 1956 River Murray Flood Plain (b) wholly within a bund that has storage capacity of 133% or more of the volume of the largest fuel storage tank.
PO 7.5 Facilities for the collection of effluent from moored vessels are sited and designed to prevent environmental harm.	DTS/DPF 7.5 None are applicable.
Access	
PO 8.1 Waterfront reserve areas between buildings and the water are maximised to preserve the amenity of view corridors along the riverine environment.	DTS/DPF 8.1 None are applicable.
PO 8.2 Public access routes to waterfront reserves are provided and maintained.	DTS/DPF 8.2 None are applicable.
PO 8.3 Driveways, access tracks and parking areas are designed and constructed to minimise excavation and filling.	DTS/DPF 8.3 No more than 100mm excavation and 100mm of fill is required in association with the construction of a driveway, access track or parking area.
River Structures	
PO 9.1 River structures are located where they do not cause a hazard to safe navigation.	DTS/DPF 9.1 River structures are located: (a) wholly outside navigation channels as defined by navigational signs (b) 100m or more from either side of a ferry crossing (c) 150m or more from a lock.

PO 9.2 River structures are located where they do not cause a hazard to a designated recreation area for water skiing and swimming.	DTS/DPF 9.2 River structures are located wholly outside designated recreation areas for water skiing and swimming.
PO 9.3 Proliferation of water pumps is avoided to limit impact on the riverine environment.	DTS/DPF 9.3 None are applicable.
PO 9.4 Water pumping infrastructure is designed and constructed to limit impact on the riverine environment.	DTS/DPF 9.4 Water pumping infrastructure is designed and constructed in accordance with Figure 1.
PO 9.5 Proliferation of jetties and floating pontoons avoided to minimise impact on the riverine environment.	DTS/DPF 9.5 Jetties and floating pontoons are: (a) ancillary to a dwelling (b) limited to one jetty or floating pontoon per dwelling (c) located on the same allotment as the associated dwelling or (d) are separated from the allotment (or lease site) accommodating the associated dwelling by a public reserve or a public road (but not both) or (e) are for the repair, maintenance or replacement of an existing licensed river structure.
PO 9.6 Jetties and floating pontoons are designed and constructed to limit impact on the riverine environment.	DTS/DPF 9.6 Jetties and floating pontoons: (a) extend not more than 8m into the river measured from the riverbank at normal pool level (b) have a width of not more than 1.4m in the case of a jetty (or gangway width in the case of a floating pontoon) (c) in the case of floating pontoons, do not exceed the dimensions 3m by 6m (d) maintain a minimum of 3m between river structures including other jetties and pontoons.
PO 9.7 A proliferation of boat ramps is avoided to minimise impact on the riverine environment.	DTS/DPF 9.7 The repair, maintenance or replacement of an existing licensed boat ramp.
PO 9.8 On-river mooring facilities are developed only where:  (a) the mooring facility will not result in a mooring capacity exceeding one vessel per allotment (b) where the allotment has a direct frontage to the river (or is only separated by a public road or public reserve, but not both) and the allotment contains an existing dwelling (c) the width of the river is greater than 100m at normal pool level.	DTS/DPF 9.8 None are applicable.
PO 9.9	DTS/DPF 9.9 Moorings for vessels not located within: (a) 100m of either side of a ferry crossing

Moorings for vessels are located to avoid interfering with the operation or function of a ferry crossing, lock or major pumping station.	(b) 150m of a lock (c) 400m of a major pumping station.
PO 9.10 Development of structures designed for the mooring of more than one vessel are located off-channel in a marina.	DTS/DPF 9.10 None are applicable.

### Procedural Matters (PM) – Referrals

Class of Development / Activity	Referral Body	Purpose of Referral	Statutory Reference
<p>Any of the following classes of development, except where the development is, in the opinion of the relevant authority, minor in nature and would not warrant a referral when considering the purpose of the referral:</p> <p>(a) development comprising the erection, construction, modification, enlargement or removal of a dam, wall or other structure that will collect or divert, or collects or diverts water flowing in a watercourse or surface water flowing over land</p> <p>(b) the following classes of development that require or may require water to be taken in addition to any allocation that has already been granted under the Landscape South Australia Act 2019:</p> <ul style="list-style-type: none"> <li>(i) horticulture</li> <li>(ii) activities requiring irrigation, other than irrigation used for domestic purposes</li> <li>(iii) aquaculture</li> <li>(iv) industry</li> <li>(v) intensive animal husbandry</li> <li>(vi) horse keeping</li> <li>(vii) commercial forestry</li> </ul> <p>(c) development that is within the ambit of clause 7 of Schedule 3 of the Planning, Development and Infrastructure (General) Regulations 2017</p> <p>(d) the construction of a building, or the undertaking of an act or activity specified in clause 3 of Schedule 3 of the Planning, Development and Infrastructure (General) Regulations 2017, other than where the development:</p> <ul style="list-style-type: none"> <li>(i) is the construction of a fence not exceeding 2m in height or</li> </ul>	Minister responsible for administration of the <i>River Murray Act 2003</i> .	To provide expert assessment and direction to the relevant authority on potential impacts from development on the health of the River Murray system, its natural flow regime (including floodwaters), water quality, and cultural heritage.	Development of a class to which Schedule 9 clause 3 item 15 of the Planning, Development and Infrastructure (General) Regulations 2017 applies.

<p>(ii) is the construction of a carport, verandah, balcony, porch or other similar structure or</p> <p>(iii) is the construction of an enclosed shed, garage or similar outbuilding:</p> <p>A. that is ancillary to an existing building; and</p> <p>B. where the enclosed shed, garage or similar outbuilding will not have a total floor area of more than 150m<sup>2</sup>; and</p> <p>C. that is located outside the 1956 River Murray Flood Plain or will be fitted with roller doors, <b>removable panels</b> or similar on two opposite ends or sides so as not to impede flood waters; and</p> <p>D. that will not be located closer to the River Murray than the building to which it is ancillary</p> <p>or</p> <p>(iv) is the construction of an agricultural building:</p> <p>A. that is located outside the 1956 River Murray Flood Plain or will be fitted with roller doors, <b>removable panels</b> or similar on two opposite ends or sides so as not to impede flood waters; and</p> <p>B. that is not closer than 200m to the River Murray; and</p> <p>C. that will not have a total floor area of more than:</p> <p>(A) 350m<sup>2</sup> within the Productive Rural Landscape Zone</p> <p>(B) 500m<sup>2</sup> within the Rural Zone or Rural Intensive Enterprise Zone</p> <p>(C) 250m<sup>2</sup> within any other zone</p> <p>or</p> <p>(v) comprises an alteration or extension of an existing dwelling that in the opinion of</p>			
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<p>the relevant authority is minor and where any extension of the dwelling will not result in a part of the dwelling being closer to the River Murray</p> <p>or</p> <p>(vi) is the construction of an aboveground or inflatable swimming pool, or a spa pool, or an in-ground swimming pool located outside the 1956 River Murray Flood Plain</p> <p>or</p> <p>(vii) is the construction of a dwelling (or the alteration or extension of an existing dwelling) that is located outside the 1956 River Murray Flood Plain and not closer than 100m to the River Murray</p> <p>or</p> <p>(viii) is the construction of an elevated dwelling that is located within the Rural Shack Settlement Zone and has an open undercroft area or an undercroft area:</p> <p>A. that when enclosed, is enclosed on two opposite ends or sides using roller doors, <del>removable panels</del> or other material that can be easily opened or removed during times of flood</p> <p>B. that is not a habitable room</p> <p>C. that will have enclosed areas for a toilet, shower or laundry facilities not exceeding a combined maximum floor area of 15m<sup>2</sup></p> <p>or</p> <p>(ix) is the construction of a transportable dwelling or cabin, or a removable annexe, within an existing caravan and tourist park</p> <p>(e) land division classified as restricted by the Planning and Design Code</p> <p>(f) land division that results in:</p> <p>(i) 4 or more additional allotments</p>			
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<p>(ii) 4 or more additional grants of occupancy (by the conferral or exercise of a right to occupy part only of an allotment) or</p> <p>(iii) a mix of 4 or more additional allotments and separate grants of occupancy</p> <p>(g) land division that involves the creation of a new allotment or grant of occupancy where any part of the boundary of the new allotment or occupancy will have a frontage to a part of the River Murray system</p> <p>(h) alteration of the boundaries of an allotment so as to result in:</p> <p>(i) the allotment having a frontage to a part of the River Murray system or</p> <p>(ii) the allotment having an increase in its frontage to a part of the River Murray system.</p>			
<p>Development that generates human wastewater from a peak loading capacity of more than 40 persons or more than 6000 litres/day and is not connected to a community wastewater management system or sewerage infrastructure.</p>	<p>Environment Protection Authority</p>	<p>To provide expert assessment and direction to the relevant authority on potential impacts to water quality in the River Murray system from pollutants discharged into any waters or onto land in a place that is reasonably likely to impact the quality of drinking water.</p>	<p>Development of a class to which Schedule 9 clause 3 item 9 of the Planning, Development and Infrastructure (General) Regulations 2017 applies.</p>
<p>Any pontoons, jetties, piers or other structures (whether on water or land) designed or used to provide moorings or dry storage for 5 or more vessels at any 1 time</p>			
<p>Vessel refuelling facility</p>			
<p>Vessel sewage pump-out facility.</p>			
<p>Composting works (excluding a prescribed approved activity) - being a depot, facility or works with the capacity to treat, during a 12 month period more than 200 tonnes of organic waste or matter. (EPA Licence)</p>			
<p>Wastewater treatment works - being sewage treatment works, a community wastewater management system, winery wastewater treatment works or any other wastewater treatment works with the capacity to treat, during a 12 month period, more than 2.5ML of wastewater. (EPA Licence required at more than 5 ML)</p>			
<p>Feedlots - being carrying on an operation for holding in confined yard or area and feeding principally by mechanical means or by hand not less than an average of</p>			

200 cattle (EPA Licence) or 1,600 sheep or goats per day over any period of 12 months, but excluding any such operation carried on at an abattoir, slaughterhouse or saleyard or for the purpose only of drought or other emergency feeding.			
Piggeries - being the conduct of a piggery (being premises having confined or roofed structures for keeping pigs) with a capacity of 130 or more standard pig units. (EPA licence required at 650 or more standard pig units)			
Dairies - being the carrying on of a dairy with a total processing capacity exceeding more than 100 milking animals at any 1 time.			

## Figures and Diagrams

### Drafting Notes:

Existing 'Infrastructure' diagrams are not proposed to be changed and therefore are not shown for clarity.

### Siting and Design

Figure 5 – Building Height and Undercroft Design

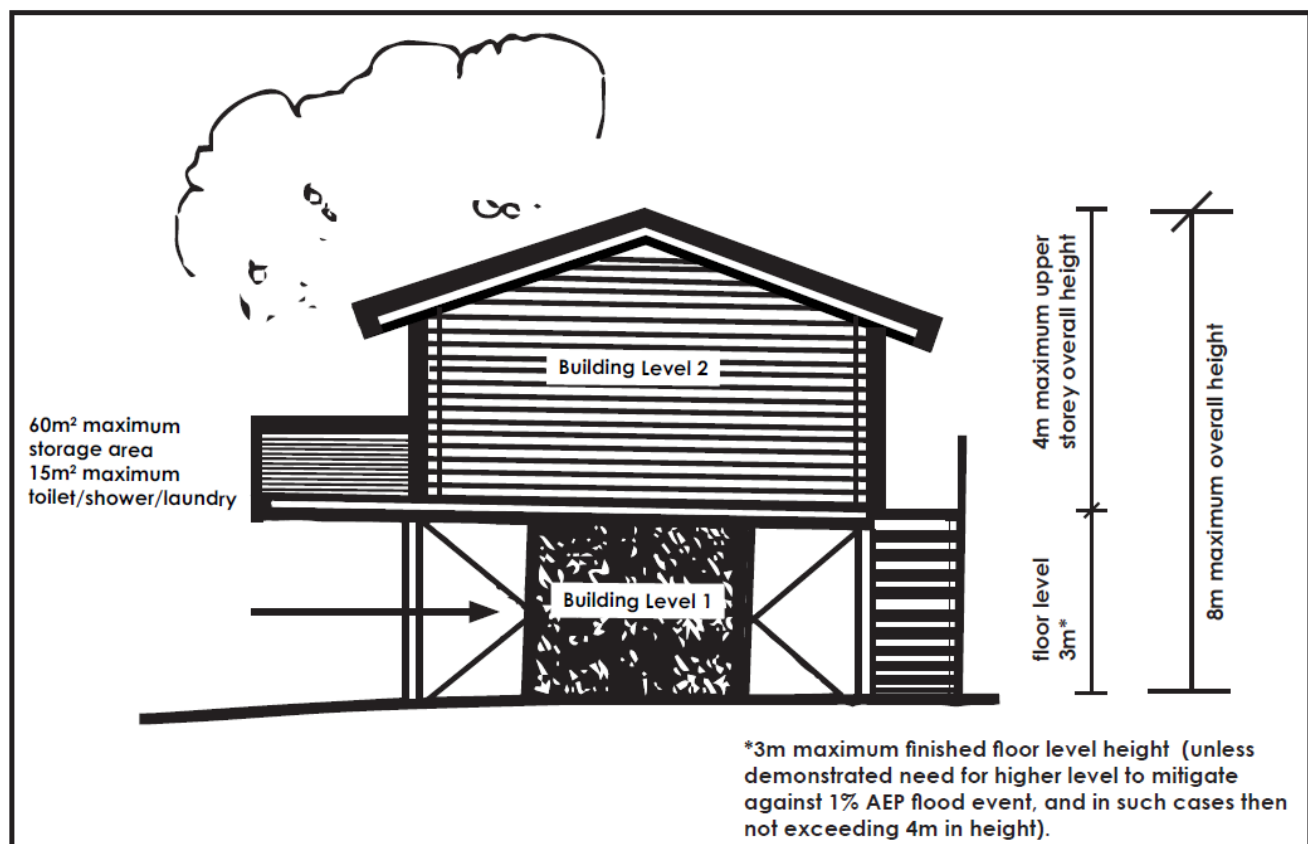


Figure 6 – Undercroft Design (Examples)

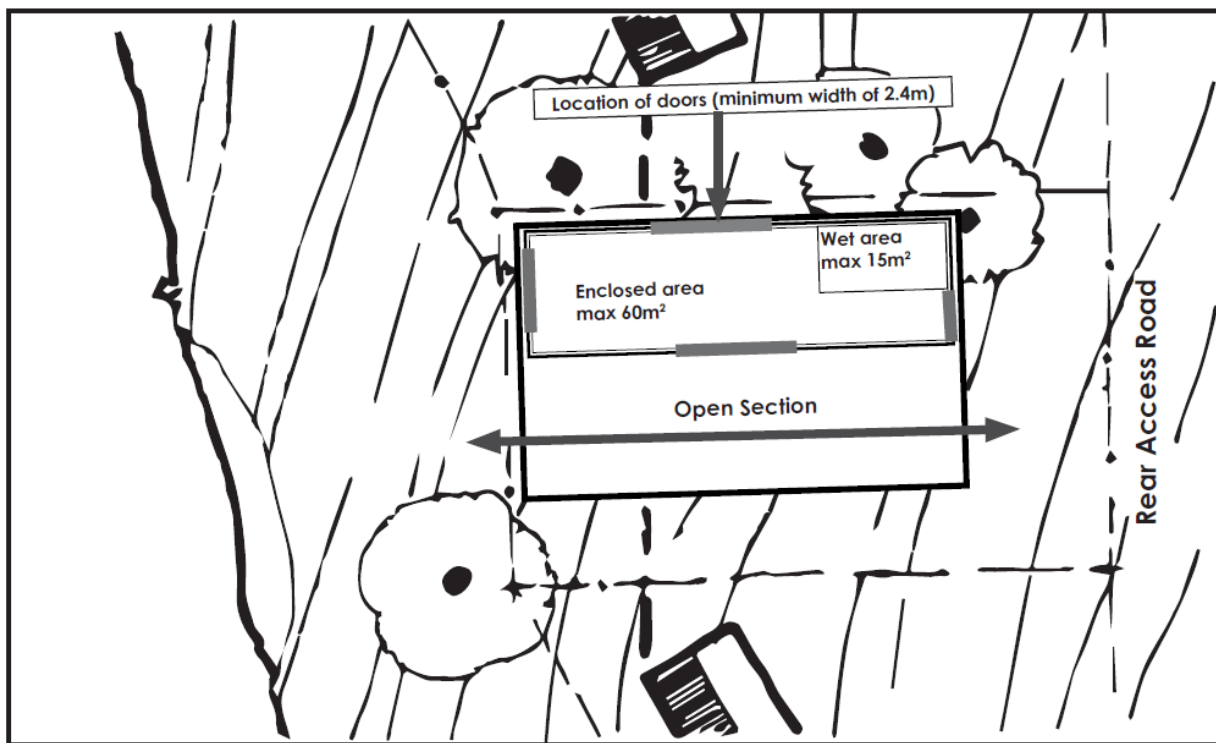
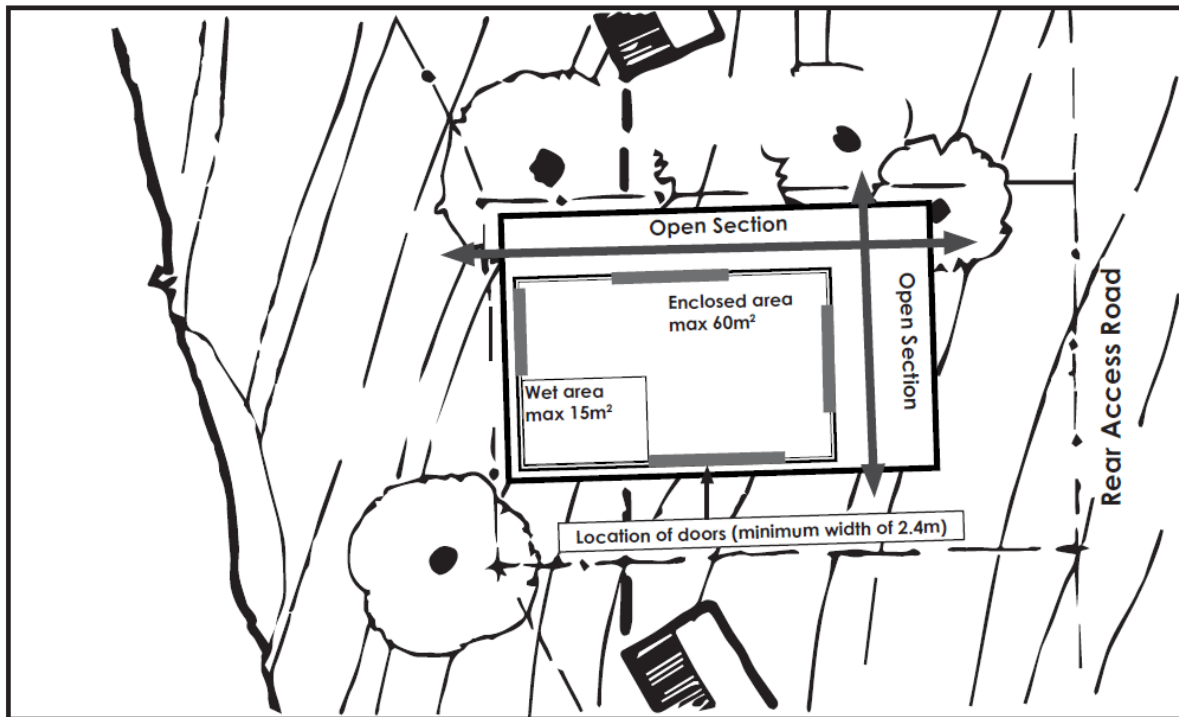
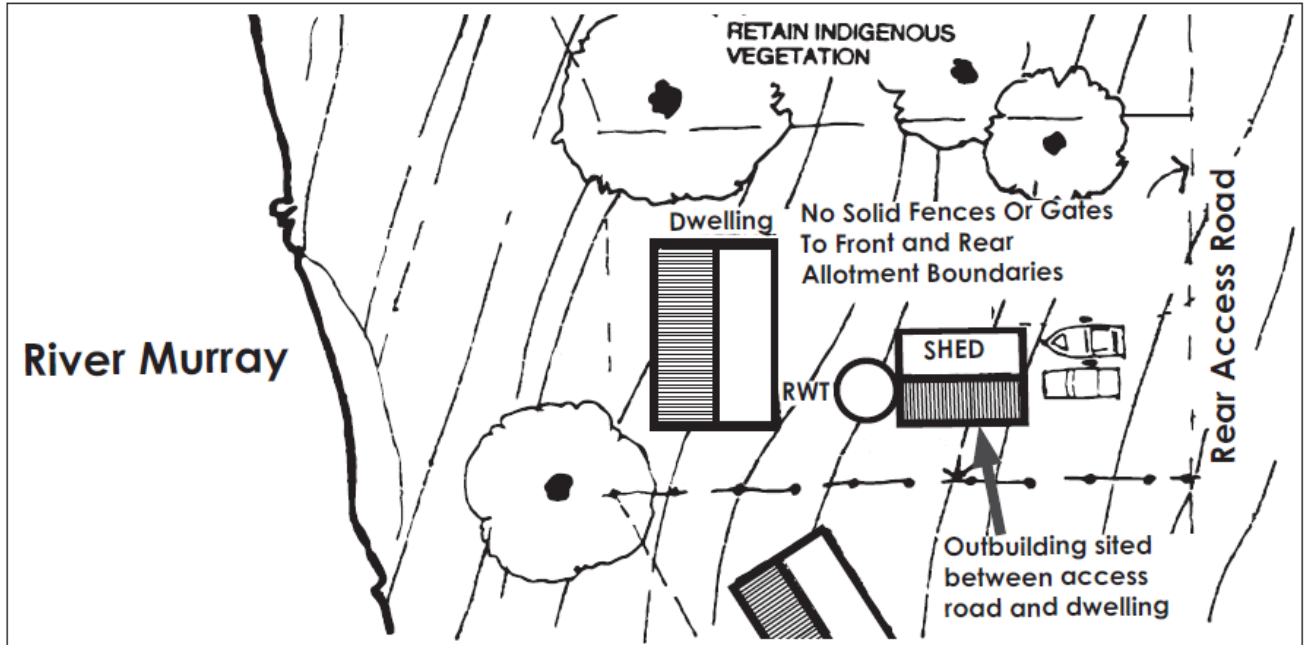


Figure 7 – Siting of outbuildings on waterfront sites





**Rural Shack Settlement Zone****Assessment Provisions (AP)****Desired Outcome (DO)**

<b>Desired Outcome</b>	
DO 1	Limited development within an environment where natural processes such as flooding, sea-level rise, sand drift and erosion occur. The natural environment is protected from inappropriate development and existing development is upgraded to incorporate environmental improvements.

**Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)**

<b>Performance Outcome</b>	<b>Deemed-to-Satisfy Criteria / Designated Performance Feature</b>
PO 1.1 Predominantly low-density residential development with complementary non-residential uses compatible with a low density residential character and natural environment.	DTS/DPF 1.1 Development comprises one or more of the following: (a) Carport (b) Detached dwelling (c) Dwelling addition (d) Outbuilding (e) Verandah
PO 1.2 Provision of small-scale tourist and visitor facilities such as public amenities and barbeque and picnic infrastructure.	DTS/DPF 1.2 None applicable
PO 1.3 Home-based business activities of a scale and type to maintain the semi-rural or semi-natural residential character and amenity.	DTS/DPF 1.3 Shop, consulting room or office (or any combination thereof) located on the same allotment and in conjunction with a dwelling where all the following are satisfied: (a) does not exceed 50m <sup>2</sup> gross leasable floor area (b) does not involve the display of goods in a window or about the dwelling or its curtilage.
<b>Built Form and Character</b>	
PO 2.1 Development is sited and designed unobtrusively to minimise its visual impact on the natural environment by: (a) using low-reflective materials and finishes that blend with, and colours that complement, the surrounding landscape (b) being located below hilltops and ridgelines (c) being screened by existing vegetation.	DTS/DPF 2.1 None are applicable.
PO 2.2 Development is sited and designed to minimise impacts on the natural environment by: (a) containing construction and built form within a tightly defined site boundary (b) minimising the extent of earthworks.	DTS/DPF 2.2 None are applicable.

<p>PO 2.3</p> <p>Buildings are designed, sited and of a scale to complement the existing built form character and establish a cohesive settlement appearance taking into account:</p> <p>(a) set backs from allotment boundaries</p> <p>(b) building orientation towards roads and foreshore areas</p> <p>(c) roof forms</p> <p>(d) building heights</p> <p>(e) site coverage</p>	<p>DTS/DPF 2.3</p> <p>None are applicable.</p>									
<p>PO 2.4</p> <p>Where located in an area of two-storey developments, upper storey development should be consistent with the prevailing residential character, heights and setbacks.</p>	<p>DTS/DPF 2.4</p> <p>None are applicable.</p>									
<p><u>Building Height</u></p>										
<p>PO 3.1</p> <p>Buildings blend with the natural environment and complement the height of nearby buildings, other than where required to be elevated on poles or piers in order to minimise the potential for personal or property damage as a result of inundation.</p>	<p>DTS/DPF 3.1</p> <p>Building height (excluding garages, carports and outbuildings) is no greater than:</p> <p>(a) the following:</p> <table><tr><td><b>Maximum Building Height (Metres)</b></td></tr><tr><td>Maximum building height is 4.5m</td></tr><tr><td>Maximum building height is 8m</td></tr><tr><td>Maximum building height is 9m</td></tr><tr><td>Maximum building height is 7.5m</td></tr><tr><td>Maximum building height is 8.3m AHD</td></tr><tr><td><b>Maximum Building Height (Levels)</b></td></tr><tr><td>Maximum building height is 1 level</td></tr><tr><td>Maximum building height is 2 levels</td></tr></table> <p>(b) in all other cases (i.e. there are blank fields for both maximum building height (metres) and maximum building height (levels) - 1 building level up to a height of 6m.</p> <p>In relation to DTS/DPF 3.1, in instances where:</p> <p>(c) more than one value is returned in the same field, refer to the Maximum Building Height (Levels) Technical and Numeric Variation layer or Maximum Building Height (Meters) Technical and Numeric Variation layer in the SA planning database to determine the applicable value relevant to the site of the proposed development</p> <p>(d) only one value is returned for DTS/DPF 3.1(a) (i.e. there is one blank field), then the relevant height in metres or building levels applies with no criteria for the other.</p>	<b>Maximum Building Height (Metres)</b>	Maximum building height is 4.5m	Maximum building height is 8m	Maximum building height is 9m	Maximum building height is 7.5m	Maximum building height is 8.3m AHD	<b>Maximum Building Height (Levels)</b>	Maximum building height is 1 level	Maximum building height is 2 levels
<b>Maximum Building Height (Metres)</b>										
Maximum building height is 4.5m										
Maximum building height is 8m										
Maximum building height is 9m										
Maximum building height is 7.5m										
Maximum building height is 8.3m AHD										
<b>Maximum Building Height (Levels)</b>										
Maximum building height is 1 level										
Maximum building height is 2 levels										
<p><u>Land Division</u></p>										
<p>PO 4.1</p>	<p>DTS/DPF 4.1</p>									

Land division achieves the following:  (a) where applicable, is consistent with the value in the Minimum Site Area Technical and Numeric Variation layer in the SA planning database and of a suitable size and dimension to contribute to a pattern of development that is consistent with the shack settlement or (b) only creates an allotment to accommodate an existing dwelling or (c) is for the purpose creating a public road or a public reserve or (d) is a minor boundary realignment for the purpose of removing an anomaly in the current boundaries with respect to the location of existing buildings and structures and where no additional allotments are created partly or wholly in the zone.	Development accords with the following:  (a) no additional allotments are created or (b) site areas (or allotment areas in the case of land division) are not less than: <table><tr><td>Minimum Site Area</td></tr><tr><td>Minimum site area is 1,200 sqm</td></tr><tr><td>Minimum site area is 200 sqm</td></tr><tr><td>Minimum site area is 850 sqm</td></tr></table> In relation to DTS/DPF 4.1, in instances where:  (c) more than one value is returned in the same field, refer to the Minimum Site Area Technical and Numeric Variation layer in the SA planning database to determine the applicable value relevant to the site of the proposed development (d) no value is returned for DTS/DPF 4.1(b) (i.e. there is a blank field), then none are applicable and the relevant development cannot be classified as deemed-to-satisfy unless DTS/DPF 4.1(a) is met.	Minimum Site Area	Minimum site area is 1,200 sqm	Minimum site area is 200 sqm	Minimum site area is 850 sqm
Minimum Site Area					
Minimum site area is 1,200 sqm					
Minimum site area is 200 sqm					
Minimum site area is 850 sqm					
Concept Plans					
PO 5.1 Development is compatible with the outcomes sought by any relevant Concept Plan contained within Part 12 - Concept Plans of the Planning and Design Code to support the orderly development of land through staging of development and provision of infrastructure.	DTS/DPF 5.1 The site of the development is wholly located outside any relevant Concept Plan boundary. The following Concept Plans are relevant: <table><tr><td>Description</td></tr><tr><td>Concept Plan 74 - Shelley Beach - Kellidie Bay</td></tr><tr><td>Concept Plan 81 - Edinburgh Defence Airfield Lighting Constraints</td></tr></table> In relation to DTS/DPF 5.1, in instances where:  (a) one or more Concept Plan is returned, refer to Part 12 - Concept Plans in the Planning and Design Code to determine if a Concept Plan is relevant to the site of the proposed development. Note: multiple concept plans may be relevant. (b) in instances where ‘no value’ is returned, there is no relevant concept plan and DTS/DPF 5.1 is met.	Description	Concept Plan 74 - Shelley Beach - Kellidie Bay	Concept Plan 81 - Edinburgh Defence Airfield Lighting Constraints	
Description					
Concept Plan 74 - Shelley Beach - Kellidie Bay					
Concept Plan 81 - Edinburgh Defence Airfield Lighting Constraints					
Ancillary Buildings and Structures					
PO 6.1 Residential ancillary buildings are sited and designed to not detract from the streetscape, waterfront or appearance of primary residential buildings on the site or neighbouring properties.	DTS/DPF 6.1 Ancillary buildings: (a) are ancillary to a dwelling erected on the same site (b) have a floor area not exceeding 60m <sup>2</sup>				

	<p>(c) are not constructed, added to or altered so that any part is situated:</p> <ul style="list-style-type: none"> <li>(i) in front of any part of the building line of the dwelling to which it is ancillary, <b>except in the case of a site with a River Murray waterfront (including where there is an intervening public reserve), where outbuildings and carports are not to be located between the waterfront and the existing or proposed dwelling</b> or</li> <li>(ii) within 900mm of a boundary of the allotment with a secondary street (if the land has boundaries on two or more roads)</li> </ul> <p>(d) in the case of a garage or carport the garage or carport:</p> <ul style="list-style-type: none"> <li>(i) is set back at least 5.5m from the boundary of the primary street</li> <li>(ii) when facing a primary street or secondary street, has a total door / opening not exceeding: <ul style="list-style-type: none"> <li>A. for dwellings of single building level - 7m in width or 50% of the site frontage, whichever is the lesser</li> <li>B. for dwellings comprising two or more building levels at the building line fronting the same public street - 7m in width</li> </ul> </li> </ul> <p>(e) if situated on a boundary (not being a boundary with a primary street or secondary street), do not exceed a length of 11.5m unless:</p> <ul style="list-style-type: none"> <li>(i) a longer wall or structure exists on the adjacent site and is situated on the same allotment boundary and</li> <li>(ii) the proposed wall or structure will be built along the same length of boundary as the existing adjacent wall or structure to the same or lesser extent</li> </ul> <p>(f) if situated on a boundary of the allotment (not being a boundary with a primary street or secondary street), all walls or structures on the boundary will not exceed 45% of the length of that boundary</p> <p>(g) will not be located within 3m of any other wall along the same boundary unless on an adjacent site on that boundary there is an existing wall of a building that would be adjacent to or about the proposed wall or structure</p> <p>(h) have a wall height or post height not exceeding 3m above natural ground level (and not including a gable end)</p> <p>(i) have a roof height where no part of the roof is more than 5m above the natural ground level</p>
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	<p>(j) if clad in sheet metal, is pre-colour treated or painted in a non-reflective colour</p> <p>(k) retains a total area of soft landscaping in accordance with (i) or (ii), whichever is less:</p> <p>(i) a total area as determined by the following table:</p> <table border="1"> <tr> <th>Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m<sup>2</sup>)</th><th>Minimum percentage of site</th></tr> <tr> <td>&lt;150</td><td>10%</td></tr> <tr> <td>150-200</td><td>15%</td></tr> <tr> <td>201-450</td><td>20%</td></tr> <tr> <td>&gt;450</td><td>25%</td></tr> </table> <p>(ii) the amount of existing soft landscaping prior to the development occurring.</p>	Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m <sup>2</sup> )	Minimum percentage of site	<150	10%	150-200	15%	201-450	20%	>450	25%
Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m <sup>2</sup> )	Minimum percentage of site										
<150	10%										
150-200	15%										
201-450	20%										
>450	25%										
<p>PO 6.2</p> <p>Outbuildings designed and sited to mitigate their visibility from the waterfront.</p>	<p>DTS/DPF 6.2</p> <p>Outbuildings are not located between the main building and waterfront boundary on a site/allotment with frontage to a waterfront.</p>										
<p>PO 6.3</p> <p>Buildings and structures that are ancillary to an existing non-residential use do not detract from the streetscape character, appearance of buildings on the site of the development, or the amenity of neighbouring properties.</p>	<p>DTS/DPF 6.3</p> <p>Non-residential ancillary buildings and structures:</p> <p>(a) are ancillary and subordinate to an existing non-residential use on the same site</p> <p>(b) have a floor area not exceeding the following:</p> <table border="1"> <tr> <th>Allotment size</th><th>Floor area</th></tr> <tr> <td>≤500m<sup>2</sup></td><td>60m<sup>2</sup></td></tr> <tr> <td>&gt;500m<sup>2</sup></td><td>80m<sup>2</sup></td></tr> </table> <p>(c) are not constructed, added to or altered so that any part is situated:</p> <p>(i) in front of any part of the building line of the main building to which it is ancillary or</p> <p>(ii) within 900mm of a boundary of the allotment with a secondary street (if the land has boundaries on two or more roads)</p> <p>(d) in the case of a garage or carport, the garage or carport:</p> <p>(i) is set back at least 5.5m from the boundary of the primary street</p> <p>(e) if situated on a boundary (not being a boundary with a primary street or secondary street), do not exceed a length of 11.5m unless:</p> <p>(i) a longer wall or structure exists on the adjacent site and is situated on the same allotment boundary</p> <p>(ii) the proposed wall or structure will be built along the same length of boundary</p>	Allotment size	Floor area	≤500m <sup>2</sup>	60m <sup>2</sup>	>500m <sup>2</sup>	80m <sup>2</sup>				
Allotment size	Floor area										
≤500m <sup>2</sup>	60m <sup>2</sup>										
>500m <sup>2</sup>	80m <sup>2</sup>										

	<p>as the existing adjacent wall or structure to the same or lesser extent</p> <p>(f) if situated on a boundary of the allotment (not being a boundary with a primary street or secondary street), all walls or structures on the boundary will not exceed 45% of the length of that boundary</p> <p>(g) will not be located within 3m of any other wall along the same boundary unless on an adjacent site on that boundary there is an existing wall of a building that would be adjacent to or about the proposed wall or structure</p> <p>(h) have a wall height (or post height) not exceeding 3m (and not including a gable end)</p> <p>(i) have a roof height where no part of the roof is more than 5m above the natural ground level</p> <p>(j) if clad in sheet metal, is pre-colour treated or painted in a non-reflective colour.</p>
Advertisements	
<p>PO 7.1</p> <p>Advertisements identify the associated business activity, and do not detract from the residential character of the locality.</p>	<p>DTS/DPF 7.1</p> <p>Advertisements relating to a lawful business activity associated with a residential use do not exceed 0.3m<sup>2</sup> and mounted flush with a wall or fence.</p>

## Rural Shack Settlement Zone

**Drafting Note:** Classes of Development that are not the subject of this Code Amendment have been omitted from the table below for clarity.

**Table 1 – Accepted Development Classification**

Class of Development	Accepted Development Classification Criteria
<p><u>Carport</u></p> <p>Except where any of the following apply:</p> <p>Coastal Areas Overlay</p> <p>Future Local Road Widening Overlay</p> <p>Future Road Widening Overlay</p> <p>Historic Area Overlay</p> <p>Local Heritage Place Overlay</p> <p>State Heritage Area Overlay</p> <p>State Heritage Place Overlay</p>	<ol style="list-style-type: none"> <li>The development will not be contrary to the regulations prescribed for the purposes of section 86 of the Electricity Act 1996</li> <li>The development will not be built, or encroach, on an area that is, or will be, required for a sewerage system or waste control system.</li> <li>It is ancillary to a dwelling erected on the site.</li> <li>Primary street setback - at least: <ol style="list-style-type: none"> <li>5.5m from the primary street boundary; and</li> <li>as far back as the building line of the building to which it is ancillary, <b>except in the case of a site with a River Murray waterfront (including where there is an intervening public reserve), where carports are not to be located between the waterfront and the existing dwelling.</b></li> </ol> </li> <li>Total floor area - does not exceed 40m<sup>2</sup>.</li> <li>Post height - does not exceed 3m measured from natural ground level (and not including a gable end).</li> <li>Building height - does not exceed 5m.</li> <li>If situated on or abutting a boundary (not being a boundary with a primary street) - a length not exceeding 11m unless: <ol style="list-style-type: none"> <li>a longer wall or structure exists on the adjacent site and is situated on the same allotment boundary; and</li> </ol> </li> </ol>



	<p>(b) the proposed wall or structure will be built along the same length of boundary as the existing adjacent wall or structure to the same or lesser extent.</p> <p>9. If the carport abuts or is situated on the boundary of the allotment (not being a boundary with a primary street):</p> <p>(a) it will not result in all relevant walls or structures located along the boundary exceeding 45% of the length of the boundary; and</p> <p>(b) it will not be located within 3m of any other wall along the same boundary unless on an adjacent site on that boundary there is an existing wall of a building that would be adjacent to or abut the proposed wall or structure.</p> <p>10. Door opening for vehicle access facing a street frontage - does not exceed, in total, 7m in width or 50% of the width of the allotment frontage (whichever lesser)</p> <p>11. The carport is located so that vehicle access:</p> <p>(a) is provided via a lawfully existing or authorised driveway or access point or an access point for which consent has been granted as part of an application for the division of land; or</p> <p>(b) is not obtained from a State Maintained Road, and will use a driveway that:</p> <p>(i) is not located within 6 metres of an intersection of 2 or more roads or a pedestrian actuated crossing;</p> <p>(ii) will not interfere with an item of street furniture (including directional signs, lighting, seating and weather shelters), other infrastructure, or a tree;</p> <p>(iii) is located so that the gradient from the place of access on the boundary of the allotment to the finished floor level at the front of the carport when the work is completed is not steeper than 1:4 on average</p> <p>(iv) is aligned relative to the street so that there is no more than a 20 degree deviation from 90 degrees between the centreline of the driveway at the public road boundary and the centre of the front of the covered car parking space for which it provides vehicle access</p> <p>(v) if located so as to provide access from an alley, lane or right of way - the alley, lane or right of way is at least 6.2m wide along the boundary of the allotment / site.</p> <p>12. If any part involves cladding in sheet metal-will have cladding which is pre-colour treated or painted in a non-reflective colour.</p> <p>13. Does not involve the clearance of native vegetation</p> <p>14. Retains a total area of soft landscaping in accordance with (a) or (b), whichever is less:</p> <p>(a) a total area as determined by the following table:</p>
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	<table border="1"> <thead> <tr> <th data-bbox="727 159 1235 241">Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m<sup>2</sup>)</th><th data-bbox="1235 159 1485 241">Minimum percentage of site</th></tr> </thead> <tbody> <tr> <td data-bbox="727 241 1235 277">&lt;150</td><td data-bbox="1235 241 1485 277">10%</td></tr> <tr> <td data-bbox="727 277 1235 340">150-200</td><td data-bbox="1235 277 1485 340">15%</td></tr> <tr> <td data-bbox="727 340 1235 405">201-450</td><td data-bbox="1235 340 1485 405">20%</td></tr> <tr> <td data-bbox="727 405 1235 470">&gt;450</td><td data-bbox="1235 405 1485 470">25%</td></tr> </tbody> </table> <p>(b) the amount of existing soft landscaping prior to the development occurring.</p>	Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m <sup>2</sup> )	Minimum percentage of site	<150	10%	150-200	15%	201-450	20%	>450	25%
Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m <sup>2</sup> )	Minimum percentage of site										
<150	10%										
150-200	15%										
201-450	20%										
>450	25%										
<p><u>Outbuilding</u>            Except where any of the following apply:            Coastal Areas Overlay            Future Local Road Widening Overlay            Future Road Widening Overlay            Hazards (Flooding) Overlay            Historic Area Overlay            Local Heritage Place Overlay            Significant Landscape Protection Overlay            State Heritage Area Overlay            State Heritage Place Overlay</p>	<ol style="list-style-type: none"> <li>The development will not be contrary to the regulations prescribed for the purposes of section 86 of the Electricity Act 1996.</li> <li>The development will not be built, or encroach, on an area that is, or will be, required for a sewerage system or waste control system.</li> <li>It is detached from and ancillary to a dwelling erected on the site.</li> <li>Primary street setback - at least:               <ol style="list-style-type: none"> <li>5.5m from the primary street boundary; and</li> <li>as far back as the building line of the building to which it is ancillary, <b>except in the case of a site with a River Murray waterfront (including where there is an intervening public reserve), where outbuildings are not to be located between the waterfront and the existing dwelling.</b></li> </ol> </li> <li>Secondary street setback - at least 900mm from the boundary of the allotment (if the land has boundaries on two or more roads).</li> <li>Total floor area - does not exceed 40m<sup>2</sup>.</li> <li>Wall height - does not exceed 3m measured from natural ground level (and not including a gable end).</li> <li>Building height - does not exceed 5m.</li> <li>If situated on or abutting a boundary (not being a boundary with a primary street or secondary street) - a length not exceeding 10m unless:               <ol style="list-style-type: none"> <li>a longer wall or structure exists on the adjacent site and is situated on the same allotment boundary; and</li> <li>the proposed wall or structure will be built along the same length of boundary as the existing adjacent wall or structure to the same or lesser extent.</li> </ol> </li> <li>If the outbuilding abuts or is situated on the boundary of the allotment (not being a boundary with a primary street or secondary street):               <ol style="list-style-type: none"> <li>it will not result in all relevant walls or structures located along the boundary exceeding 45% of the length of the boundary; and</li> <li>it will not be located within 3m of any other wall along the same boundary unless on an adjacent site on that boundary there is an existing wall of a building that would be adjacent to or abut the proposed wall or structure.</li> </ol> </li> <li>If the outbuilding is a garage, it is located so that vehicle access:               <ol style="list-style-type: none"> <li>is provided via a lawfully existing or authorised driveway or access point or an access point for which consent has</li> </ol> </li> </ol>										

been granted as part of an application for the division of land; or

- (b) is not obtained from a State Maintained Road, and will use a driveway that:
- (i) is not located within 6 metres of an intersection of 2 or more roads or a pedestrian actuated crossing;
  - (ii) will not interfere with an item of street furniture (including directional signs, lighting, seating and weather shelters), other infrastructure, or a tree;
  - (iii) is located so that the gradient from the place of access on the boundary of the allotment to the finished floor level at the front of the carport when the work is completed is not steeper than 1:4 on average
  - (iv) is aligned relative to the street so that there is no more than a 20 degree deviation from 90 degrees between the centreline of the driveway at the public road boundary and the centre of the front of the covered car parking space for which it provides vehicle access
  - (v) if located so as to provide access from an alley, lane or right of way - the alley, lane or right of way is at least 6.2m wide along the boundary of the allotment / site

12. If clad in sheet metal is pre-colour treated or painted in a non-reflective colour.

13. Does not involve-

- (a) excavation exceeding a vertical height of 1 metre; or
  - (b) filling exceeding a vertical height of 1 metre,
- and, if the development involves both excavation and filling, the total combined excavation and filling must not exceed a vertical height of 2 metres.

14. Does not involve the clearance of native vegetation.

15. The development will not be located within the extents of the River Murray 1956 Flood Level as delineated by the SA Property and Planning Atlas

16. Retains a total area of soft landscaping in accordance with (a) or (b), whichever is less:

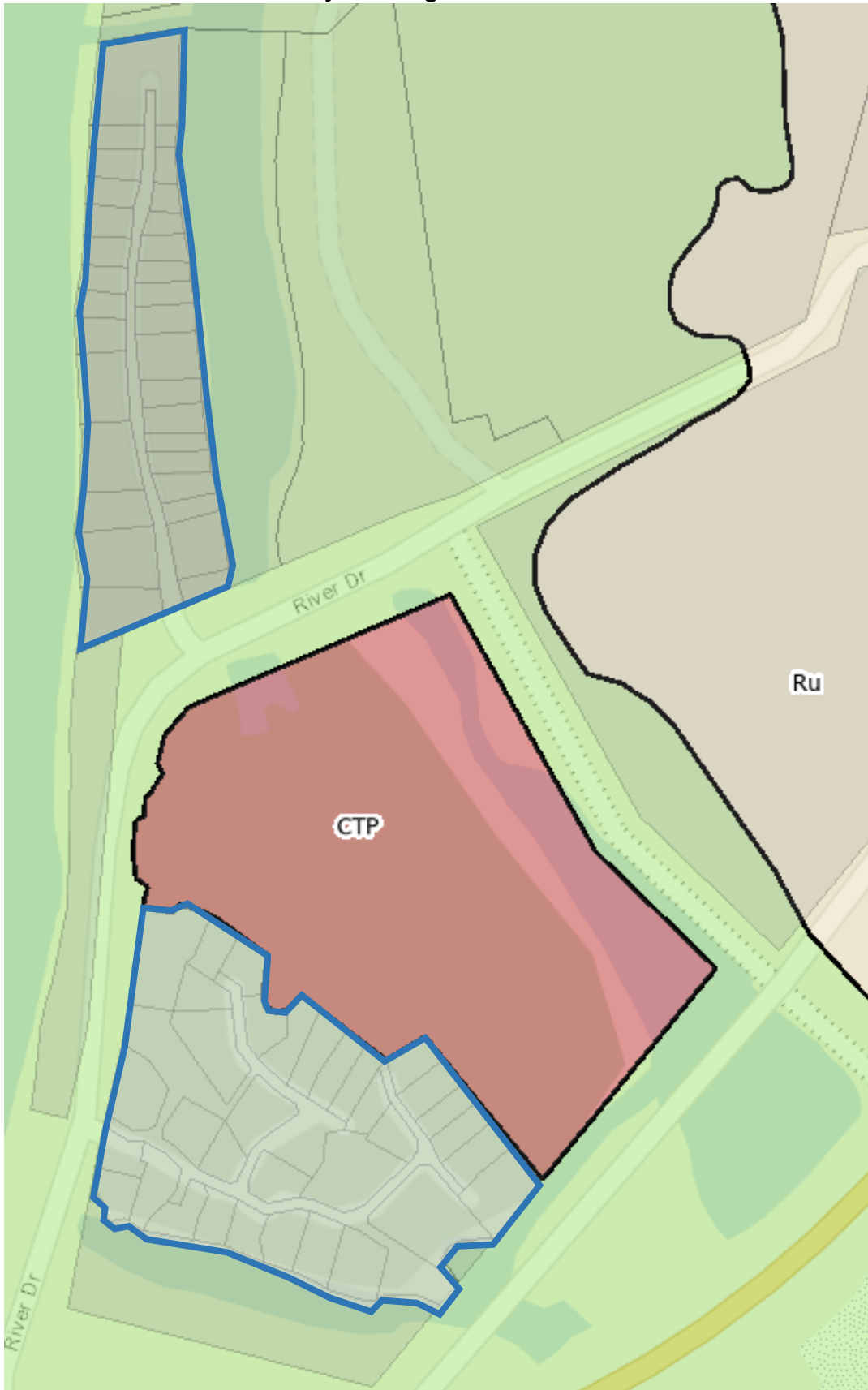
(a) a total area as determined by the following table:

Dwelling site area (or in the case of residential flat building or group dwelling(s), average site area) (m <sup>2</sup> )	Minimum percentage of site
<150	10%
150-200	15%
201-450	20%
>450	25%

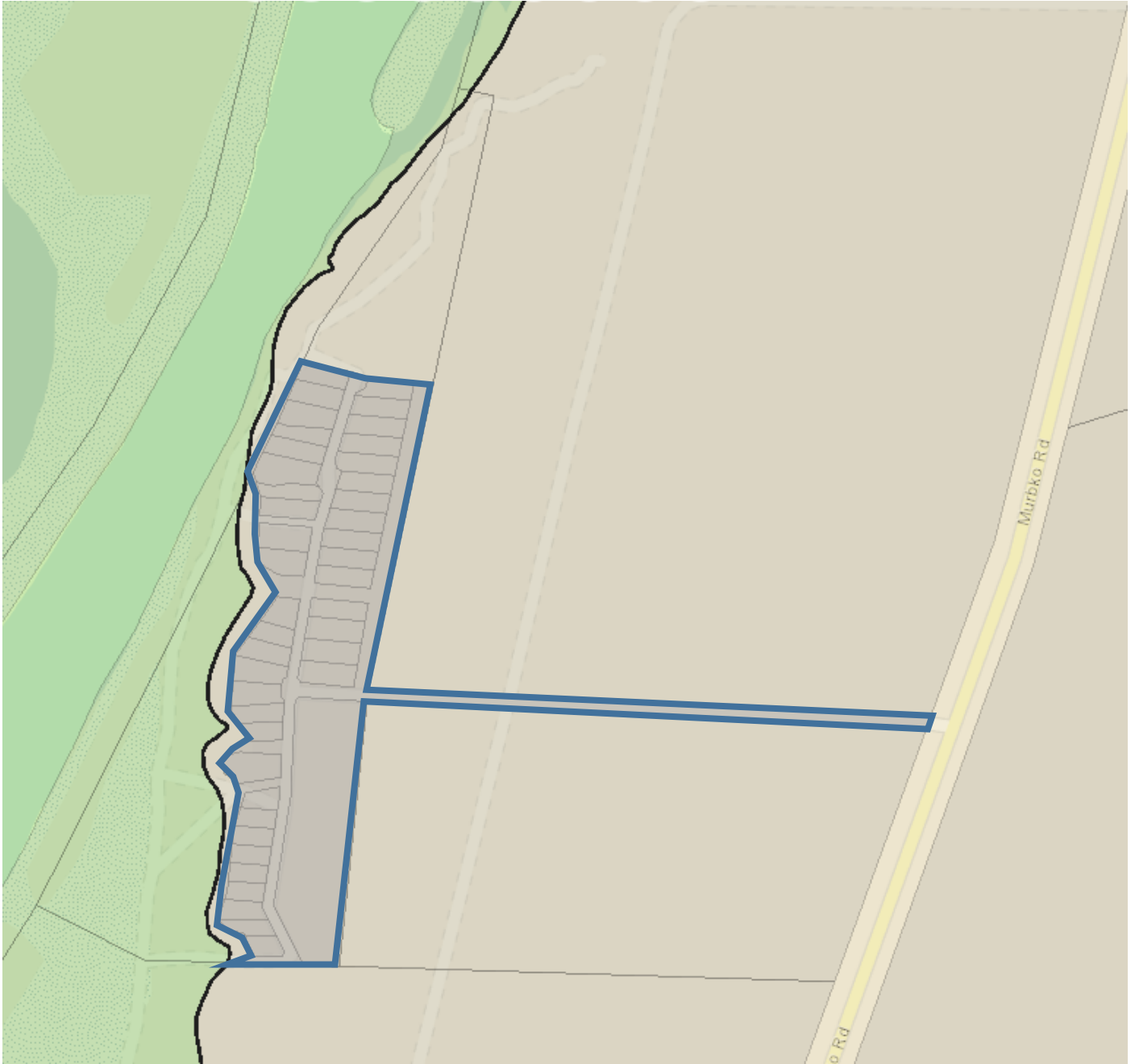
(b) the amount of existing soft landscaping prior to the development occurring.

**PROPOSED REZONINGS**

DC Loxton Waikerie – Paisley – Change from Conservation Zone to Rural Shack Settlement Zone




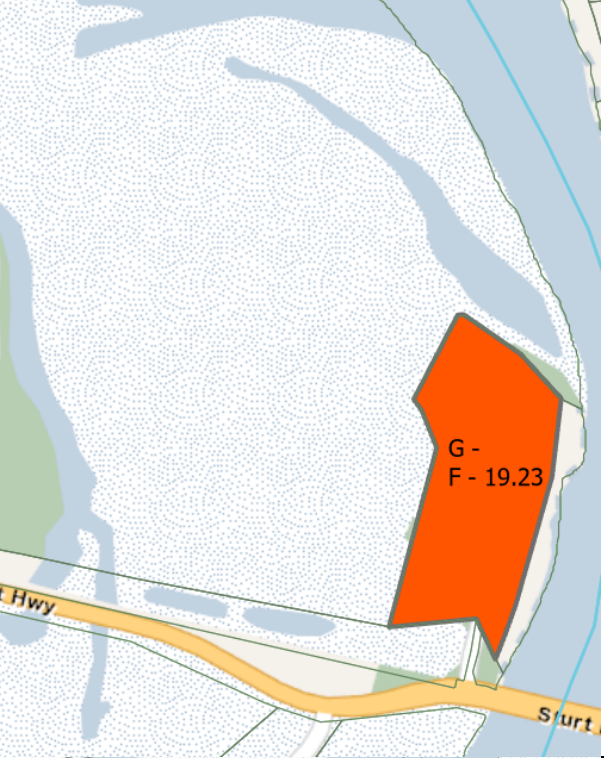
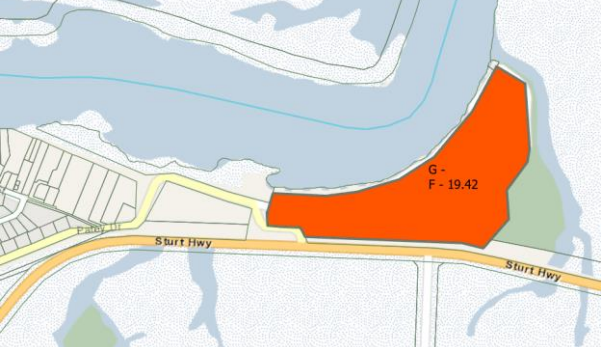
**DC Loxton Waikerie – Murbko – Change from Rural Zone to Rural Shack Settlement Zone**




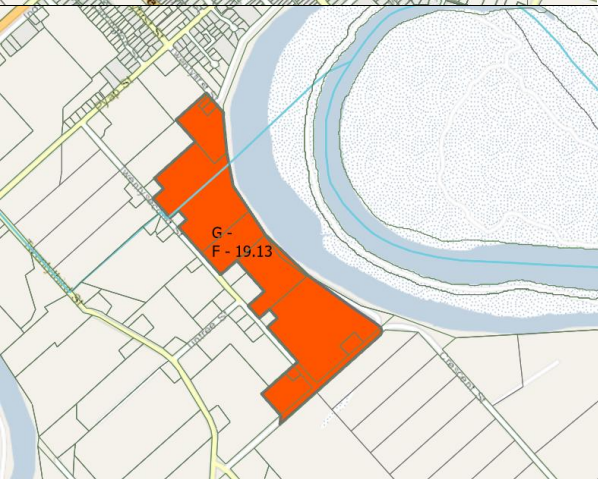
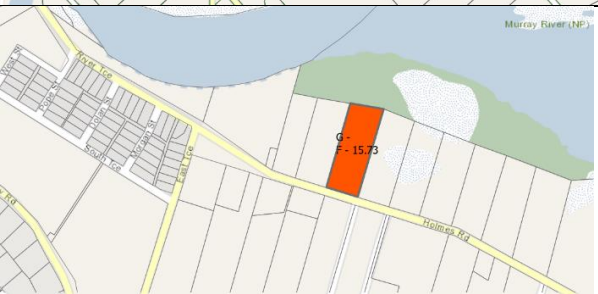

## PROPOSED SPATIAL APPLICATION OF MINIMUM FINISHED FLOOR LEVEL TECHNICAL AND NUMERIC VARIATIONS

### ***Notes when viewing the following maps:***

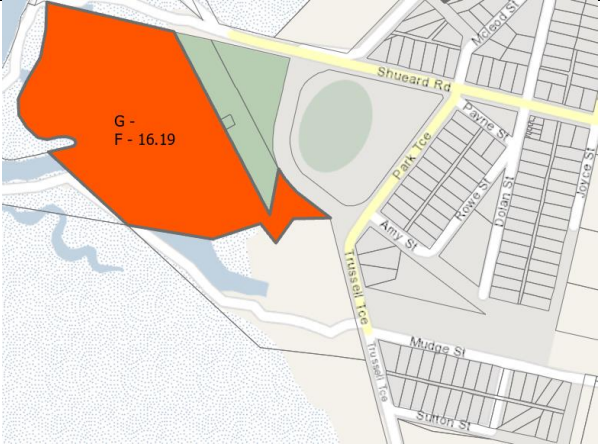

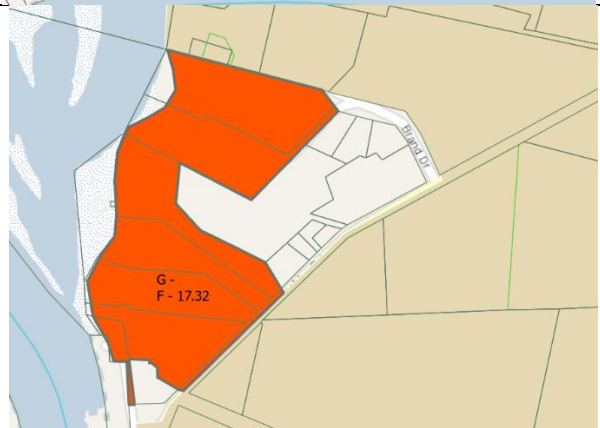
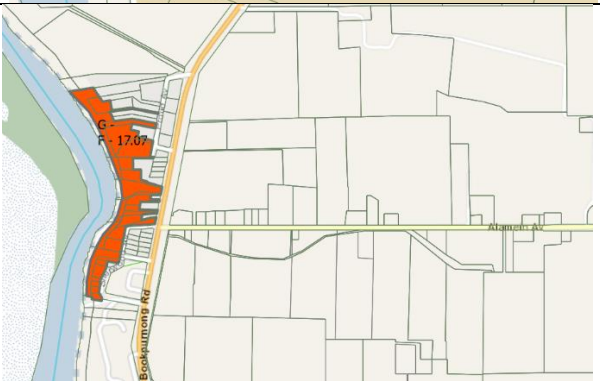
- *The areas highlighted in red are where a TNV is proposed to be introduced in this Code Amendment.*
- *The order of the maps starts at most north-eastern section of the River Murray inside the South Australian border and then moves downstream*
- *'F' denotes Finished Floor Level in Australian Height Datum Metres (AHD)*
- *Example: "F-19.23" denotes that a habitable building should be built with a finished floor level elevated to 19.23m AHD*
- *'G' denotes minimum ground level - the Code Amendment does not propose application of minimum ground level TNV to any location*
- *AHD level does NOT represent a height above ground level*

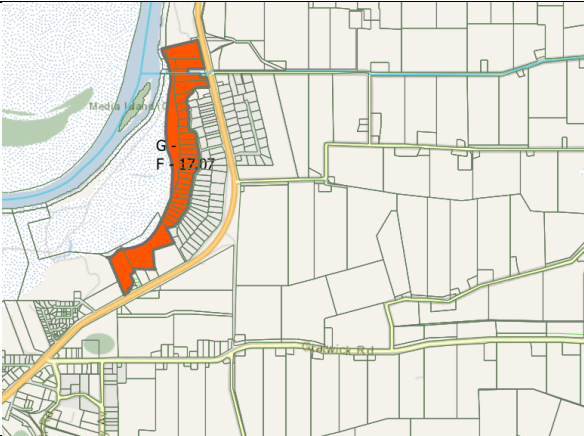
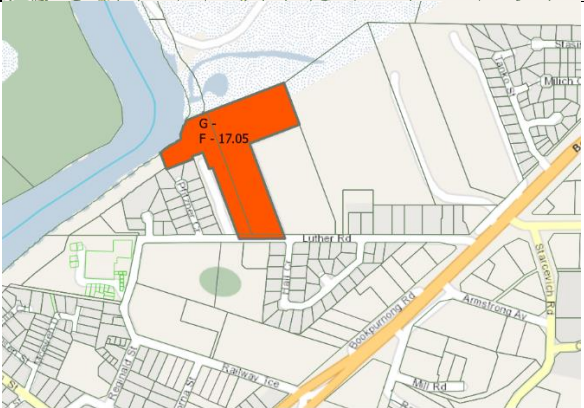
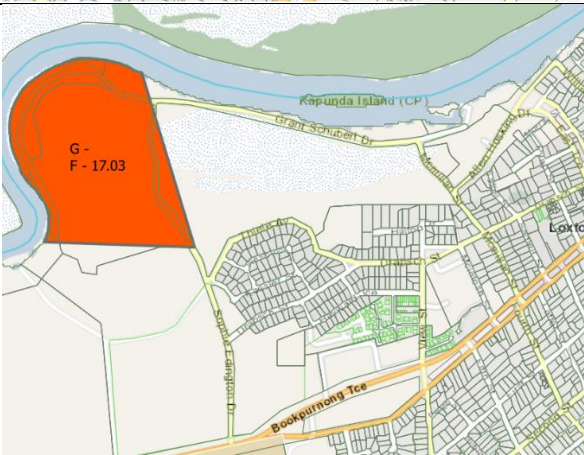
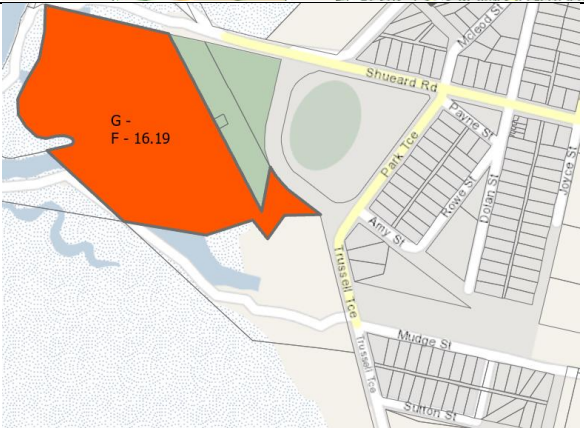
#	Suburb / Location	Proposed Spatial Application of Minimum Finished Floor Level TNV
1	Paringa	 A map of the Paringa area showing a red highlighted area with the text "G - F - 19.23". The map includes various streets such as Martin Rd, Lookout St, Paringa St, Stoeckel Ice, Railway Ice, and Sturt Hwy. The area is labeled "PARINGA" in blue.
2	Renmark	 A map of the Renmark area showing a red highlighted area with the text "G - F - 19.23". The map includes a large body of water and a road labeled "Sturt Hwy".
3	Renmark	 A map of the Renmark area showing a red highlighted area with the text "G - F - 19.42". The map includes a body of water and a road labeled "Sturt Hwy".

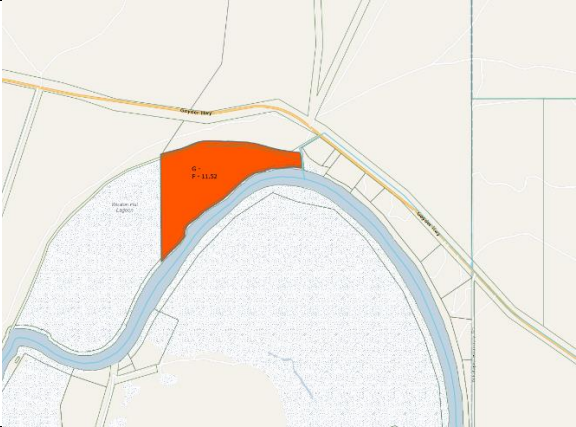
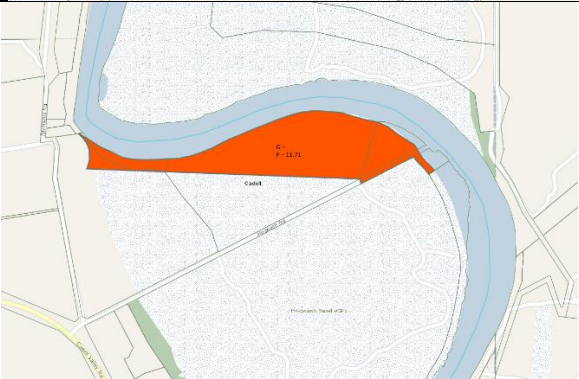
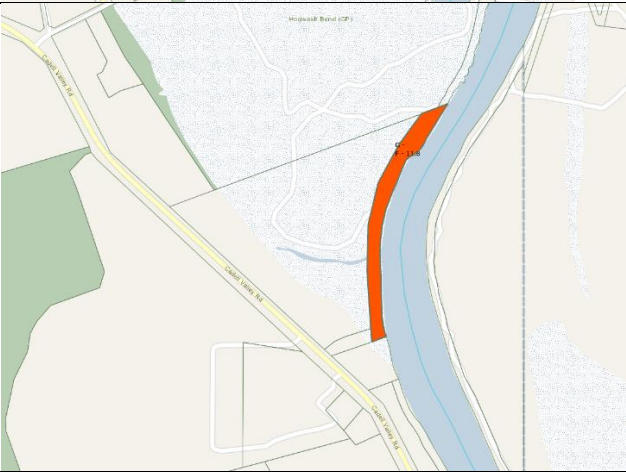
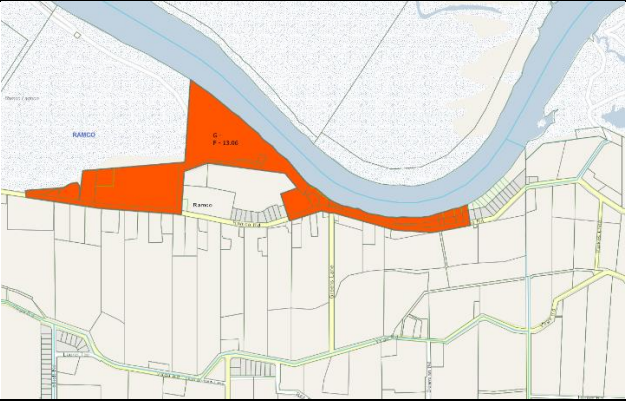


4	Renmark		
5	Renmark/Crescent		
6	Kingston on Murray		
7	Cobdogla		


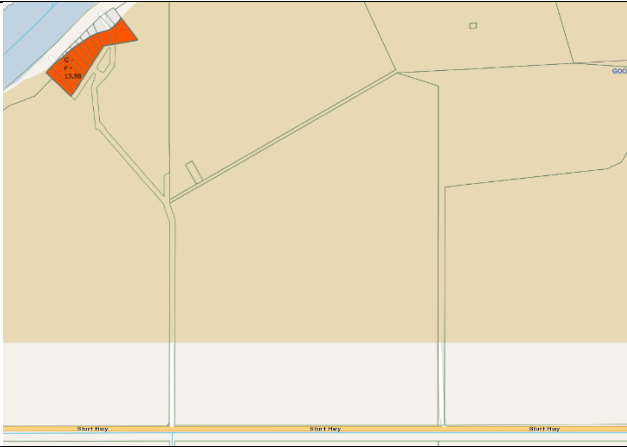




8	Cobdogla	
9	Berri	
10	Bookpurnong	
11	Loxton North	


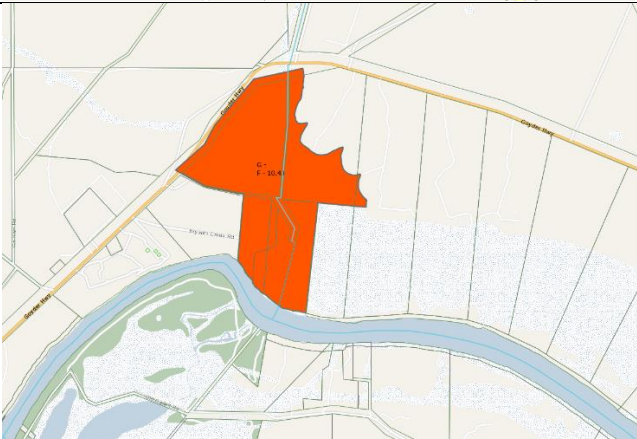
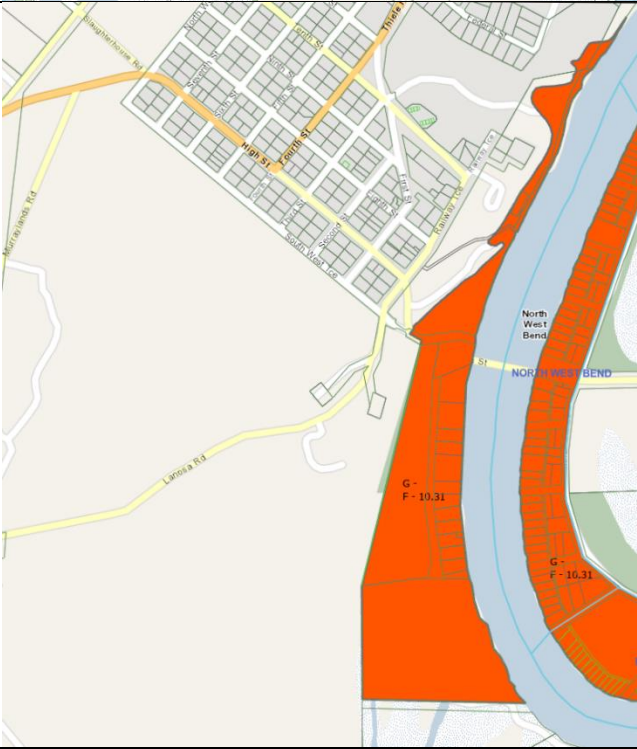
12	Loxton			
13	Loxton			
14	Loxton			
15	Cobdogla Note – RMFPA Overlay also being spatially applied at this location			

16	Stuart	
17	Cadell	
18	Cadell	
19	Ramco	




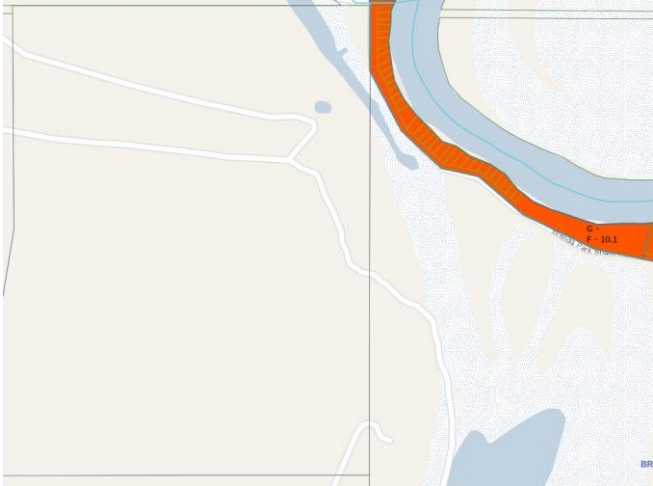
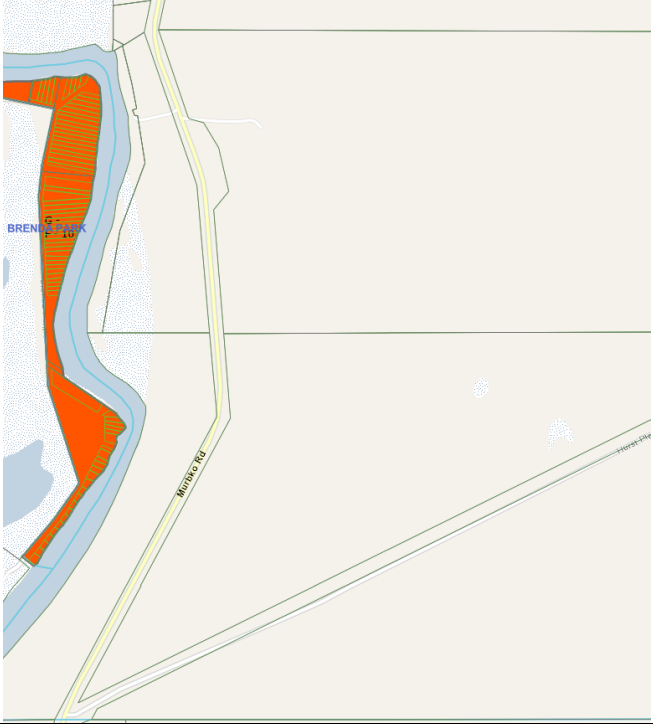
20	Waikerie	
21	Good Hope Landing	

22	Cadell	
23	Cadell Lagoon	


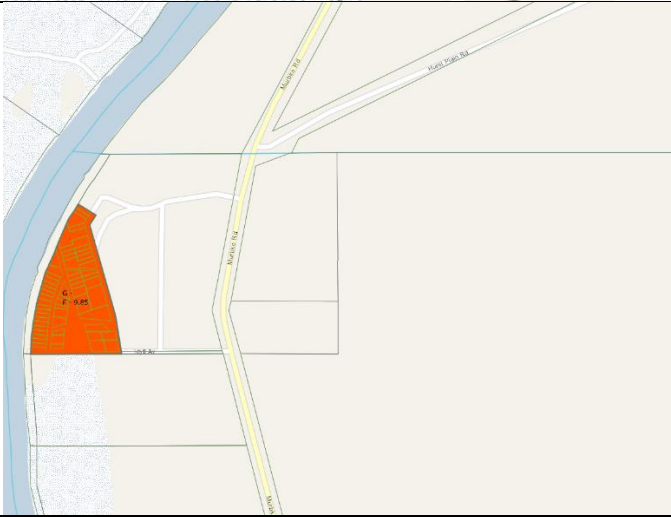
24	Cadell	
25	Stuart/Morgan	
26	Morgan/Beaumonts	

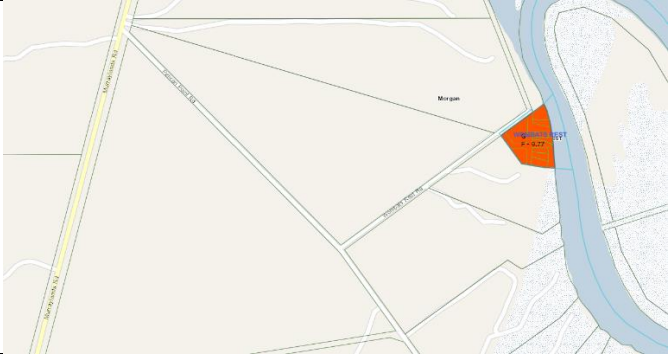
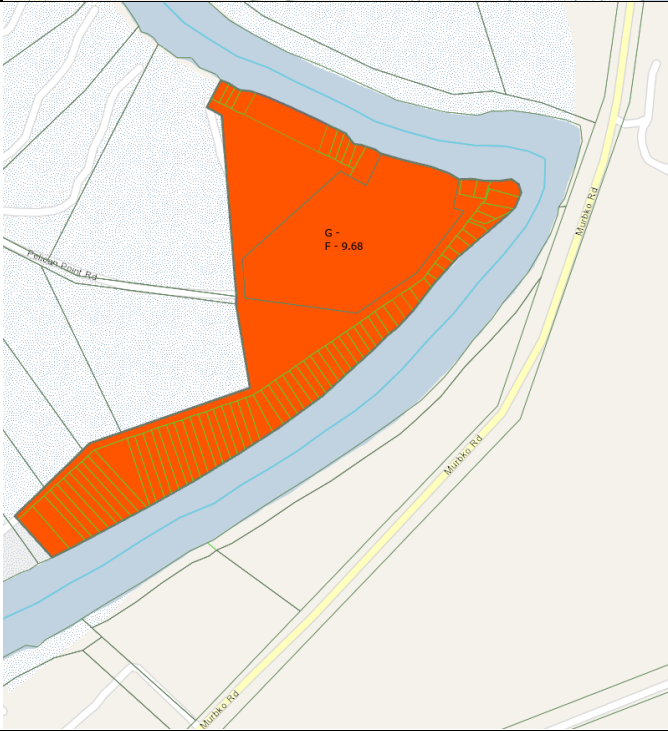
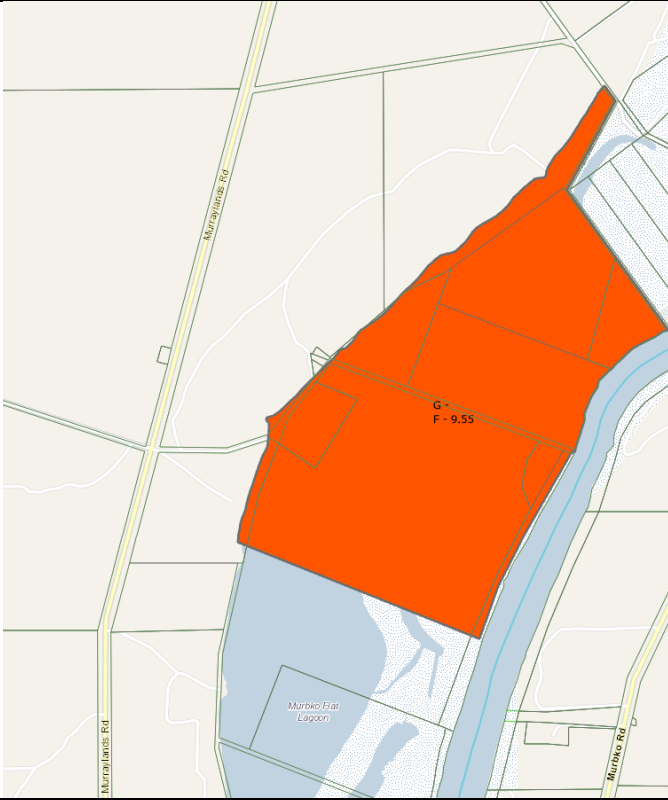
27	North West Bend	 <p>This map shows the North West Bend area. A large body of water, labeled 'Morgan Lagoons', is the central feature. A road, 'Morgan-Cadell Rd', runs horizontally across the middle. To the left of the road, there is a residential area with orange-shaded lots. One specific lot is labeled 'G - F - 10.31'. The area is also labeled 'NORTH WEST BEND' in blue text. To the right of the road, there are more green areas and a small building.</p>
28	Cadell	 <p>This map shows the Cadell area. A road, 'Morgan-Cadell Rd', runs vertically on the right side. To the left of the road, there is a large green area. A small orange-shaded lot is labeled 'G - F - 10.23'. The area is also labeled 'CADELL' in blue text.</p>


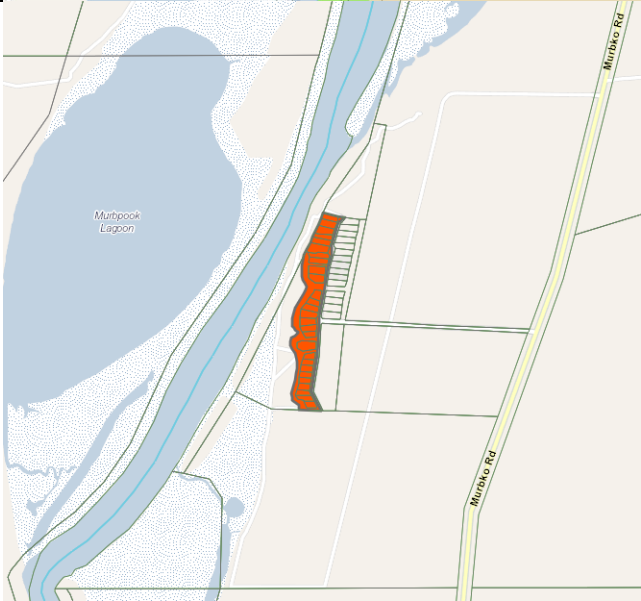
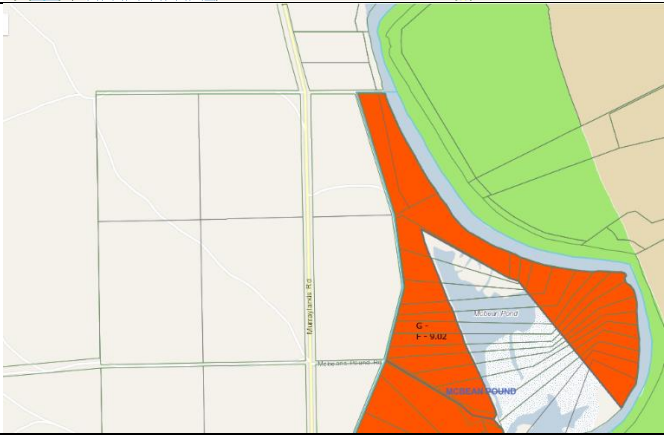


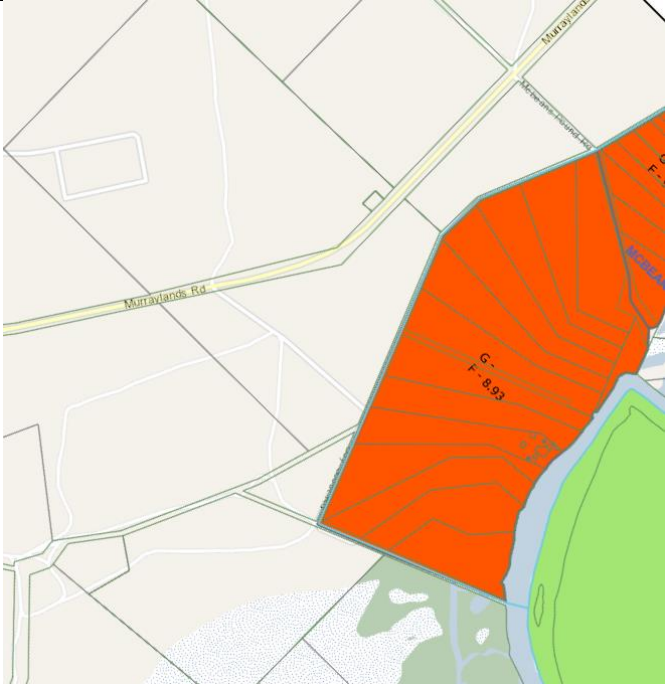
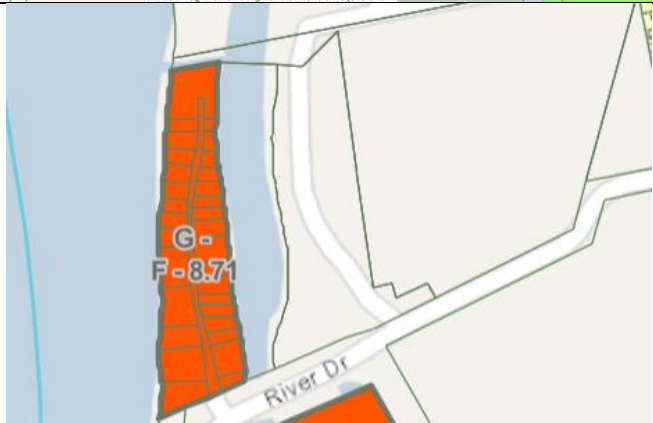
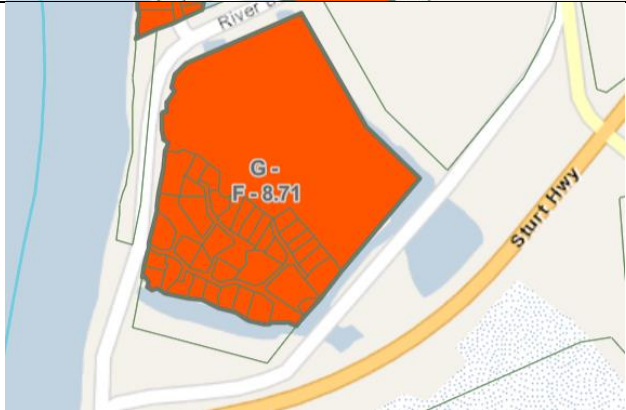
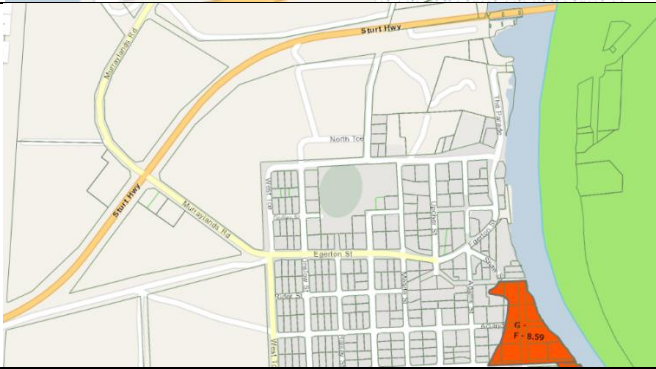
29	Morphett's Flat	
30	Brenda Park	
31	Brenda Park	



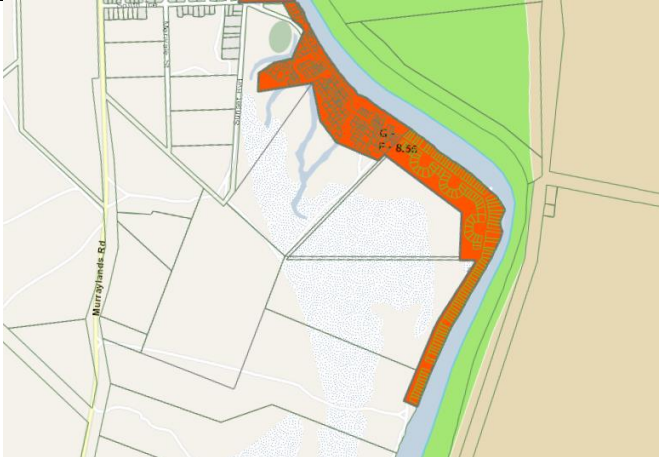

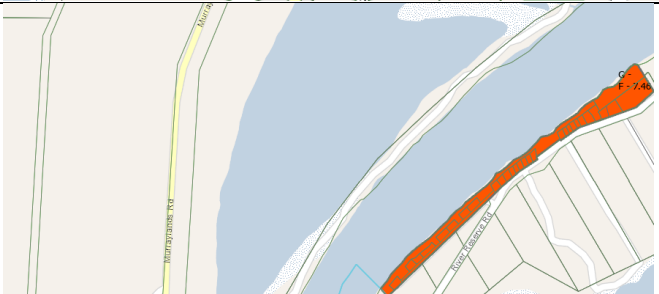

32	Morgan	
33	Murbko	


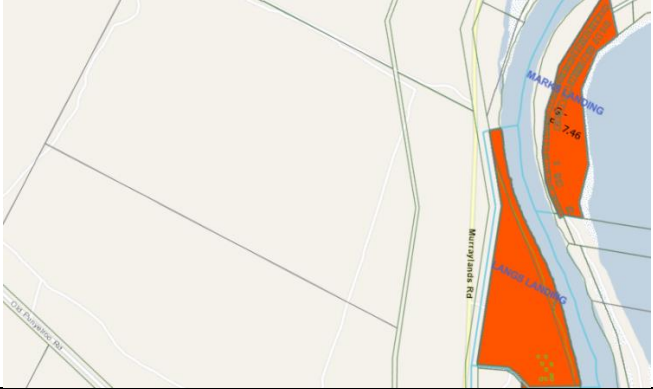

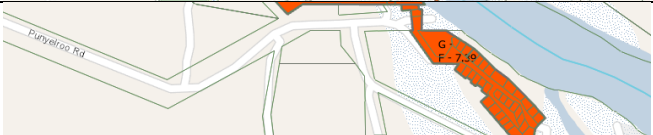
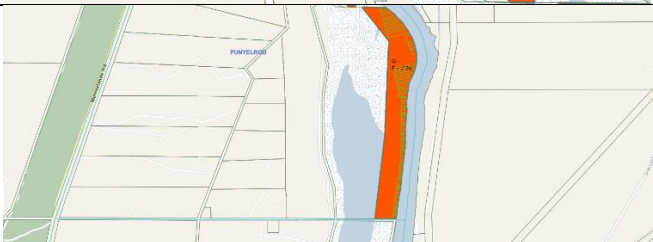
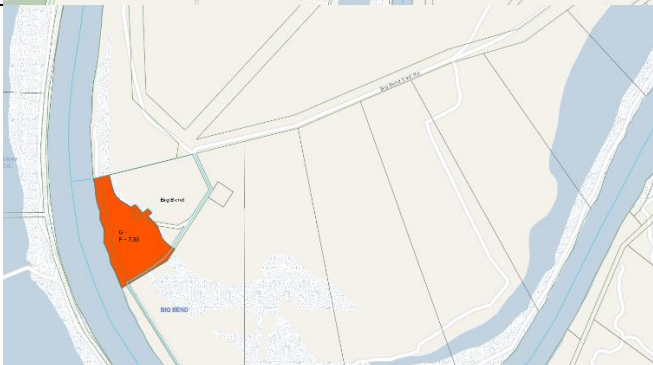
34	Wombats Rest	
35	Morgan	
36	Morgan	

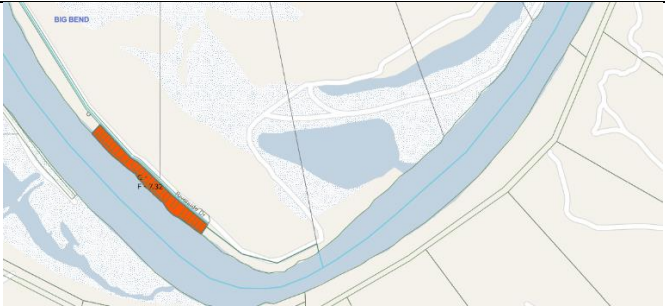
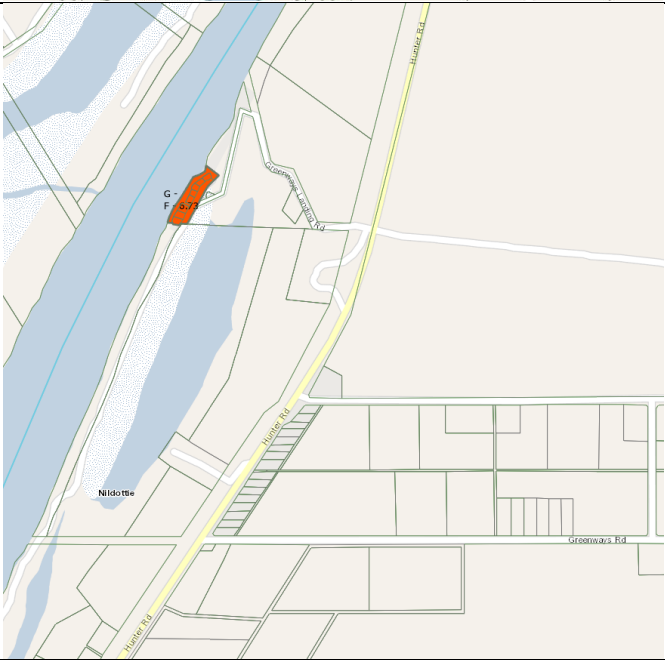
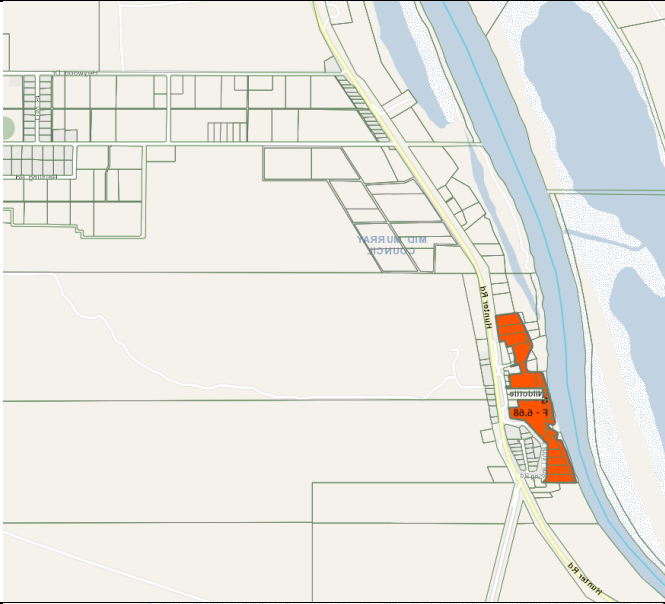
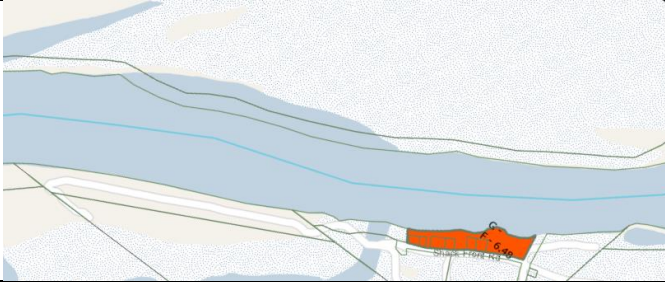
37	Murbko	
38	Murbko  Note – This site is also subject to a proposed rezoning to Rural (Shack Settlement) Zone	
39	McBean Pond	


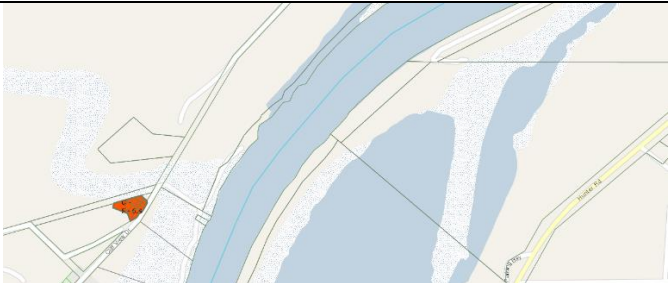
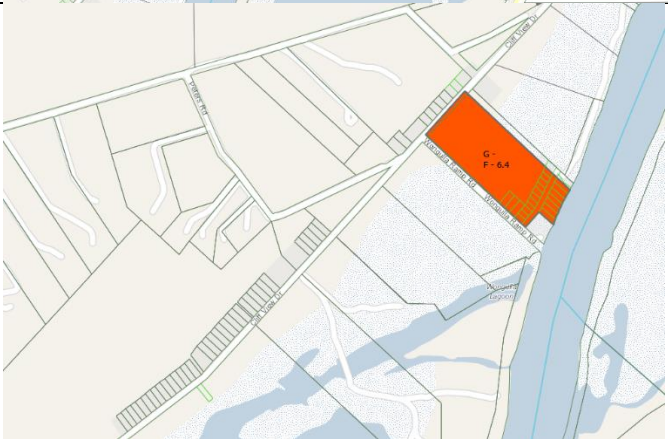
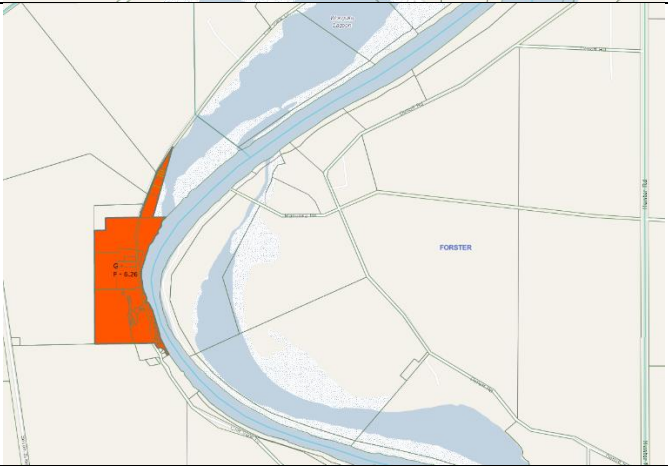
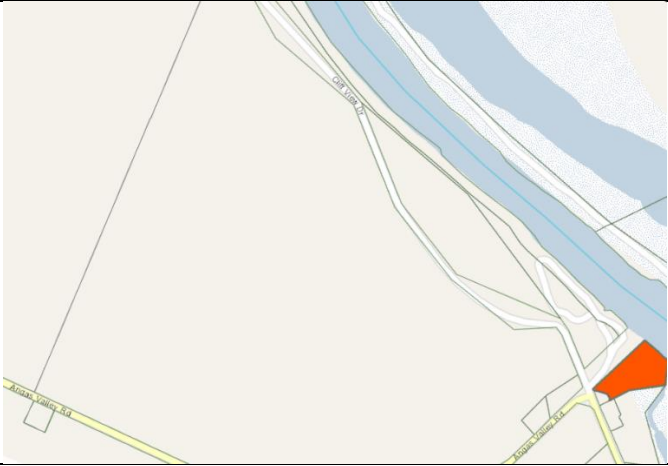
40	McBean Pond		
41	Paisley		
42	Paisley		
43	Blanchetown		



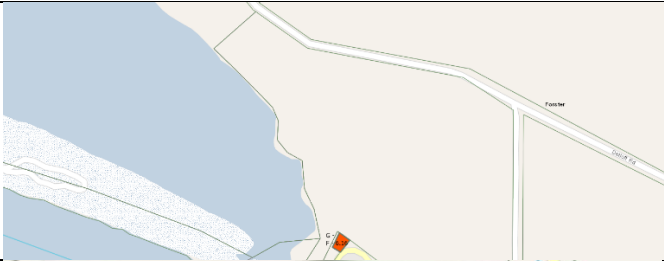
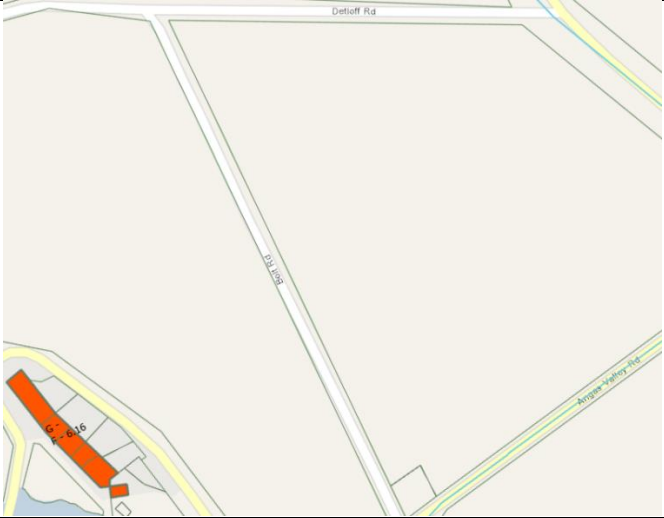
44	Blanchetown		
45	Swan Reach		
46	Swan Reach		
47	Marks Landing		




48	Swan Reach	
49	Langs Landing	
50	Punyelroo	
51	Punyelroo	
52	Punyelroo	
53	Big bend	


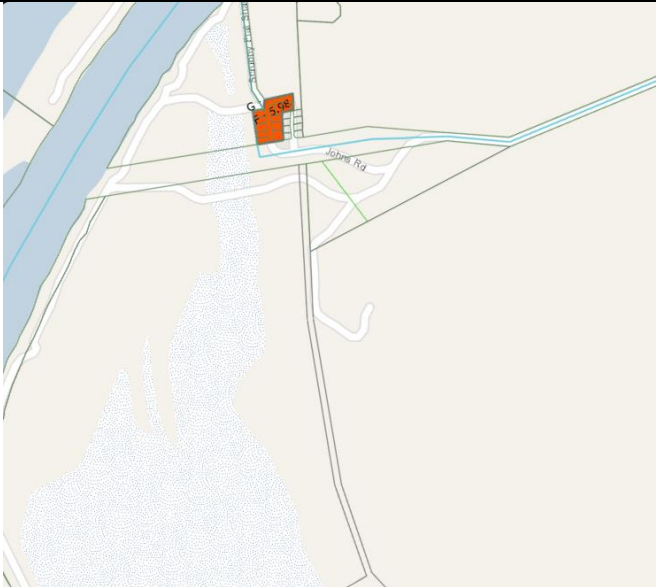


54	Big Bend			
55	Nildottie			
56	Nildottie			
57	Nildottie			

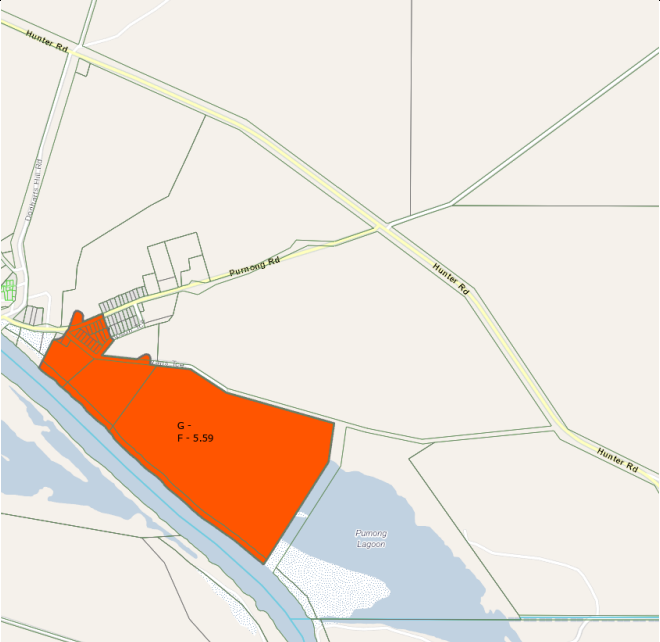
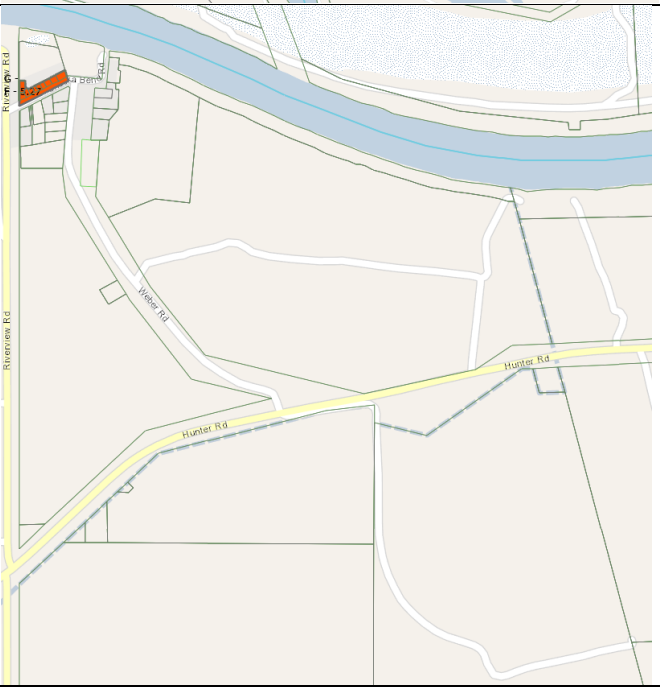
58	Nildottie			
59	Wongulla			
60	Wongulla			
61	Walker Flat			
62	Walker Flat			










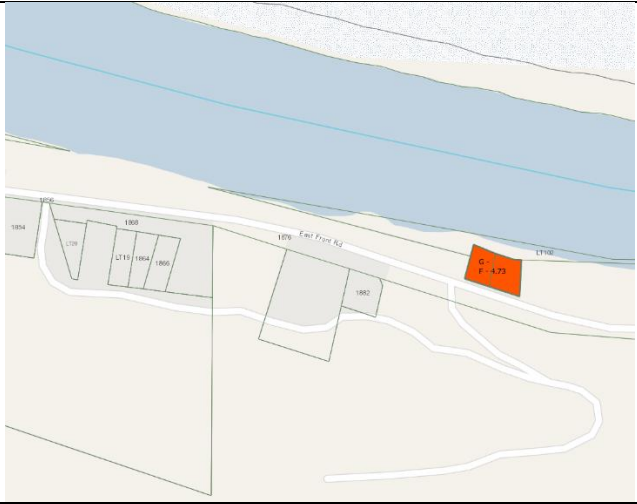
63	Forster			
64	Forster			

65	Walker Flat	
66	Walker Flat	
67	Walker Flat	

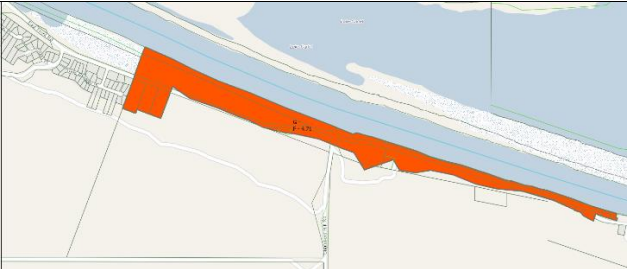


68	Nildottie			
69	Nildottie			
70	Caurnamont			
71	Caurnamont			

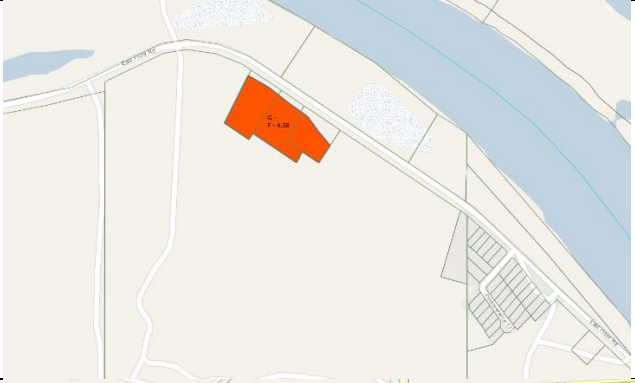


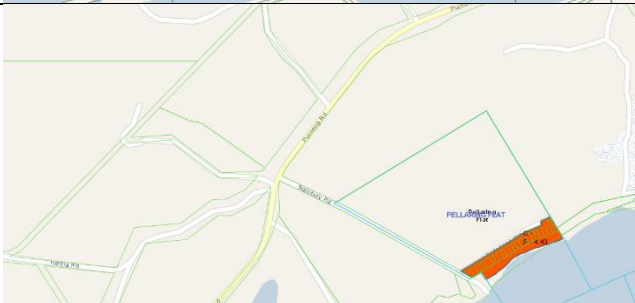
72	Caurnamont	
73	Caurnamont	

74	Caurnamont	
75	Caurnamont	
76	Caurnamont	
77	Younghusband Holdings/ Julanka Holdings/ Younghusband	

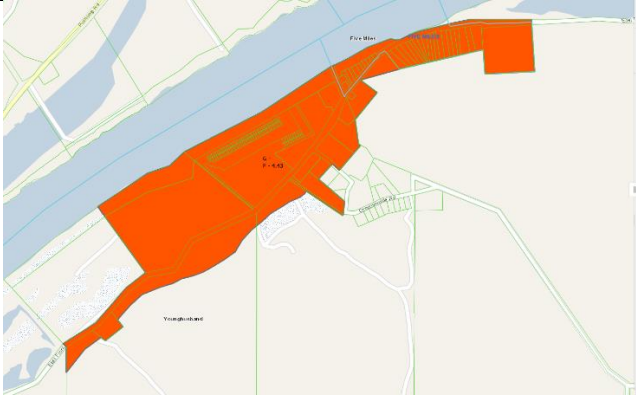
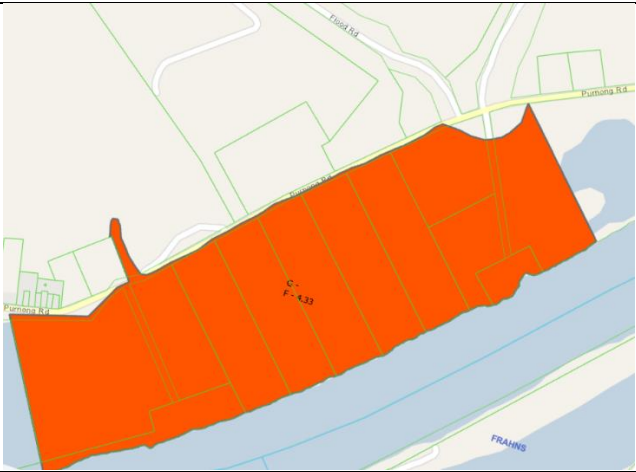

78	Old Teal Flat/Lake Carlet	
79	Younghusband	
80	Younghusband	
81	Younghusband	

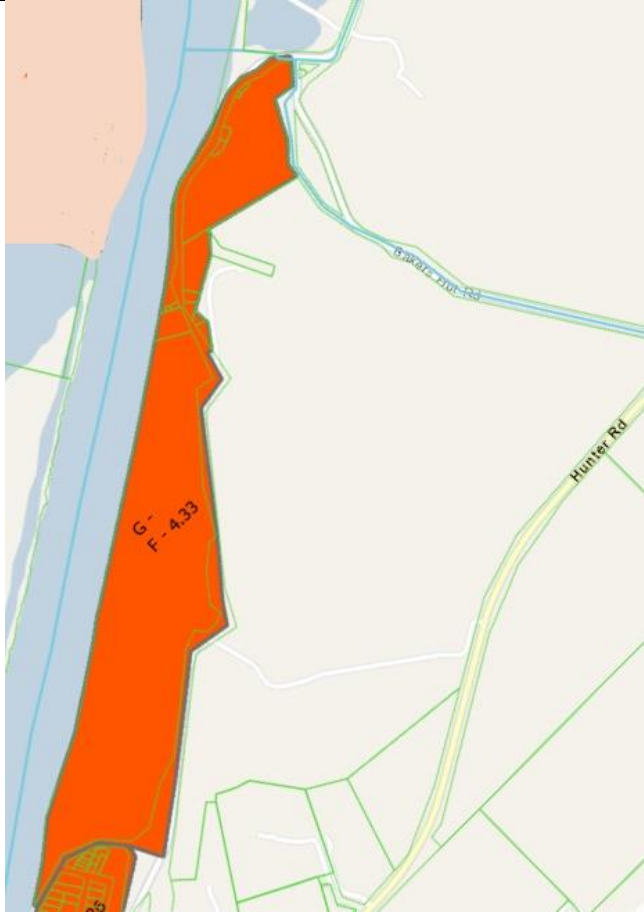
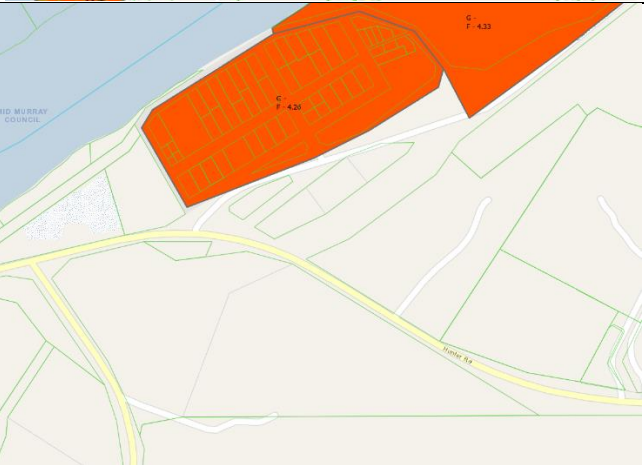



82	Younghusband		
83	Younghusband		
84	Younghusband		

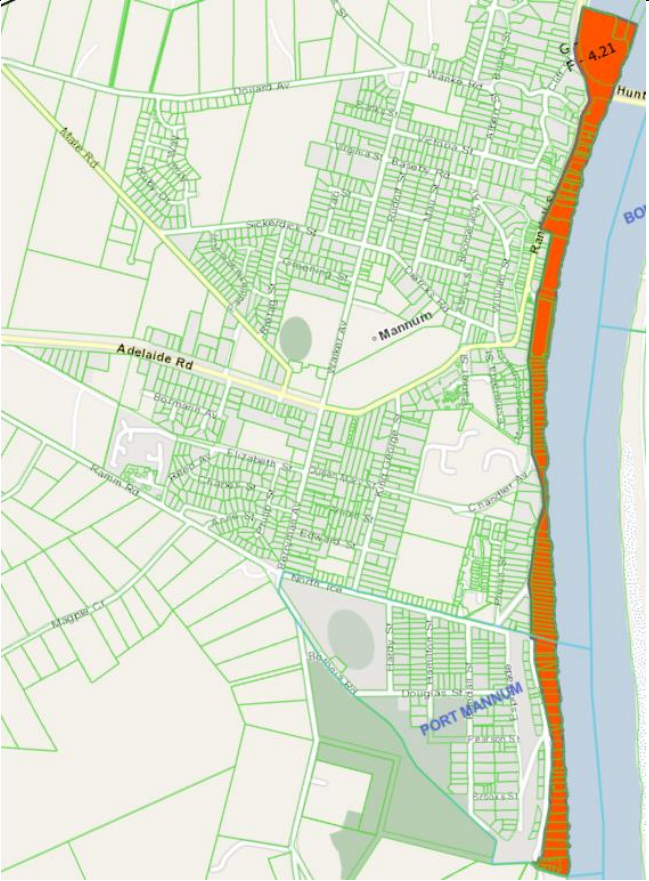
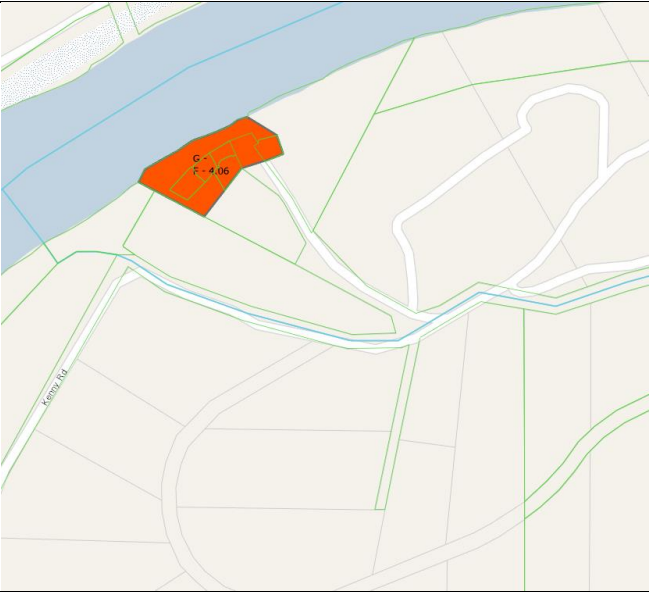
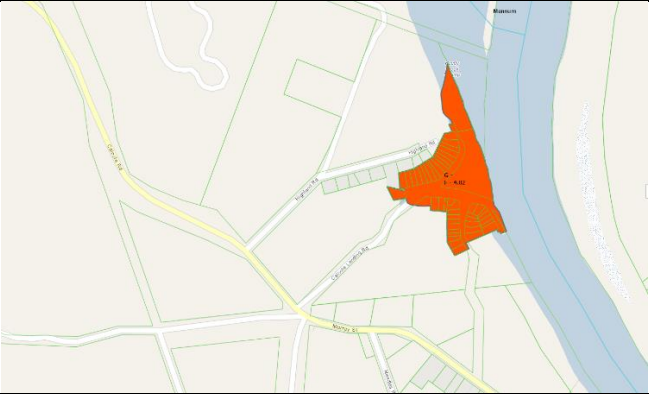
85	Younghusband	
86	Rocky Point	
87	Mannum	
88	Pellaring Flat	




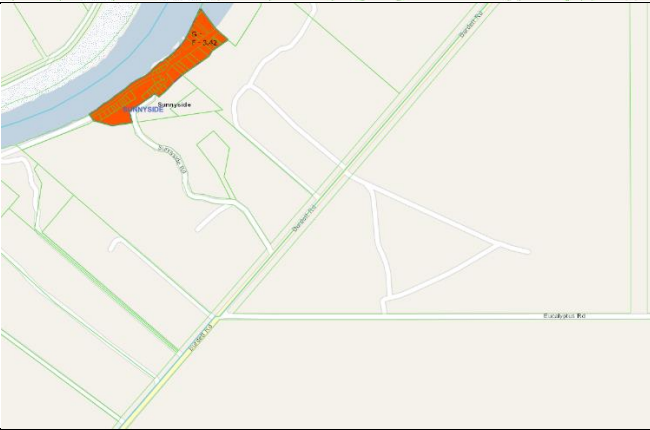


89	Five Miles/Younghusband	
90	Mannum	
91	Frahns	

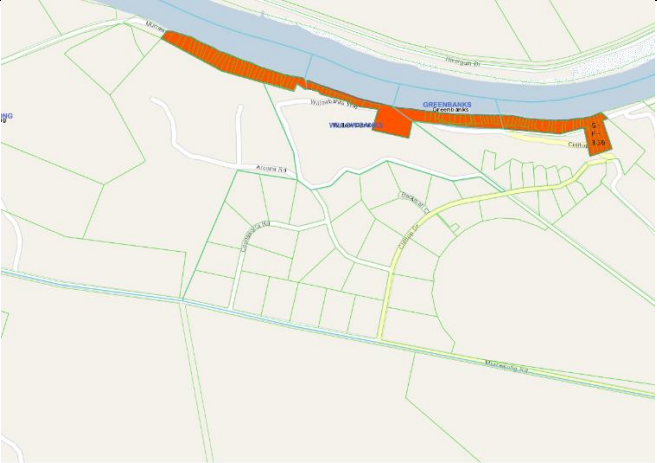
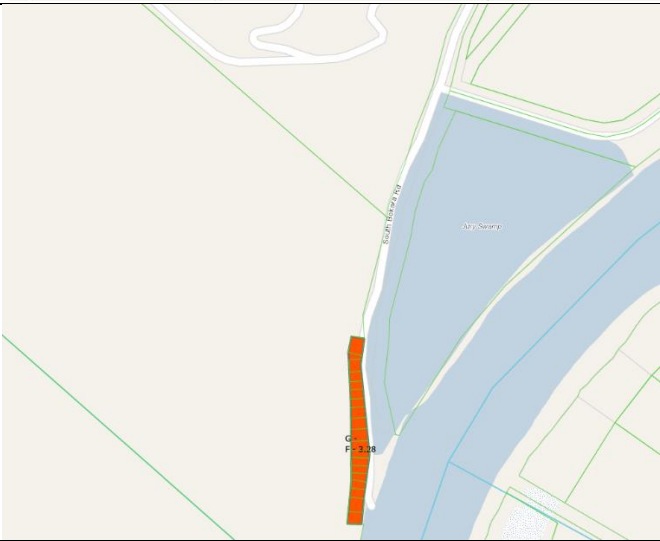


92	Cowirra		
93	Cowirra		
94	Mannum		

95	Bolto	 <p>An aerial map of an industrial area. A large rectangular area is highlighted in orange with a yellow border. This area is labeled 'G-421' in black text. To the left of this area is a large blue body of water. A blue line runs along the edge of the water. The word 'Bolto' is written in blue text near the water. To the right of the orange area is a road labeled 'Khartoum Rd'. Further right is another road labeled 'Centre Rd'. The map shows various green lines representing roads and boundaries.</p>
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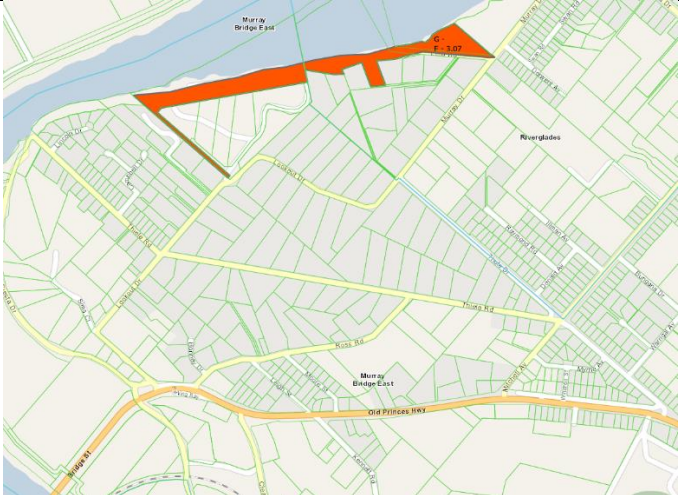

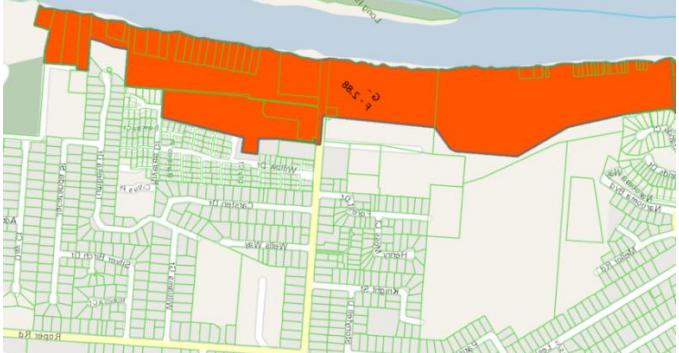

96	Mannum/Port Mannum	
97	Cowirra	
98	Caloote	

99	Zadows Landing	
100	Woodlane	
101	Mypolonga	
102	Sunnyside	


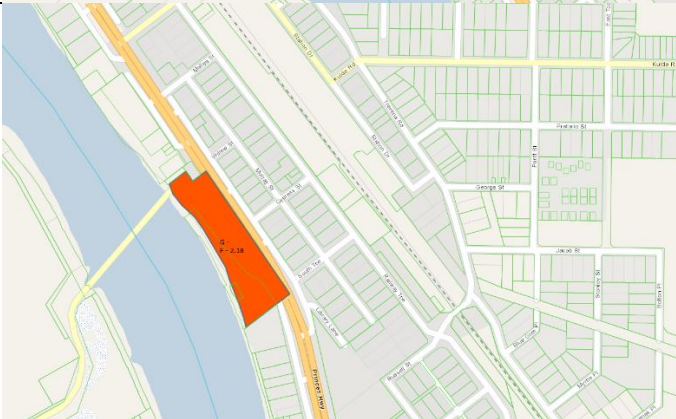
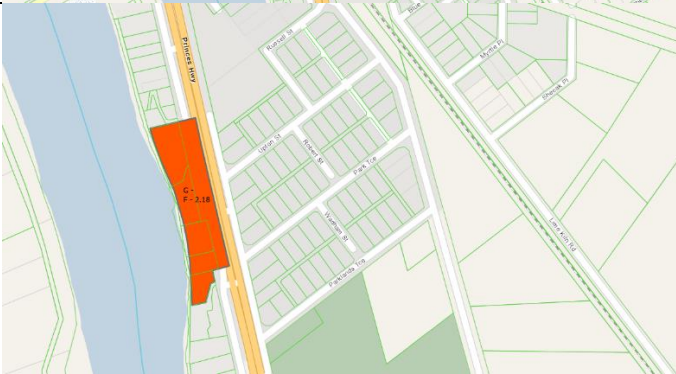



103	Sunnyside/Greenbanks/Willow Banks/Murrawong	
104	Mypolonga	
105	Avoca Dell	
106	Riverglades	



107	Riverglades/Murray Bridge East	
108	Murray Bridge	
109	Murray Bridge	
110	Long Flat	

111	Swanport			
112	Monteith			
113	White Sands			
114	White Sands			

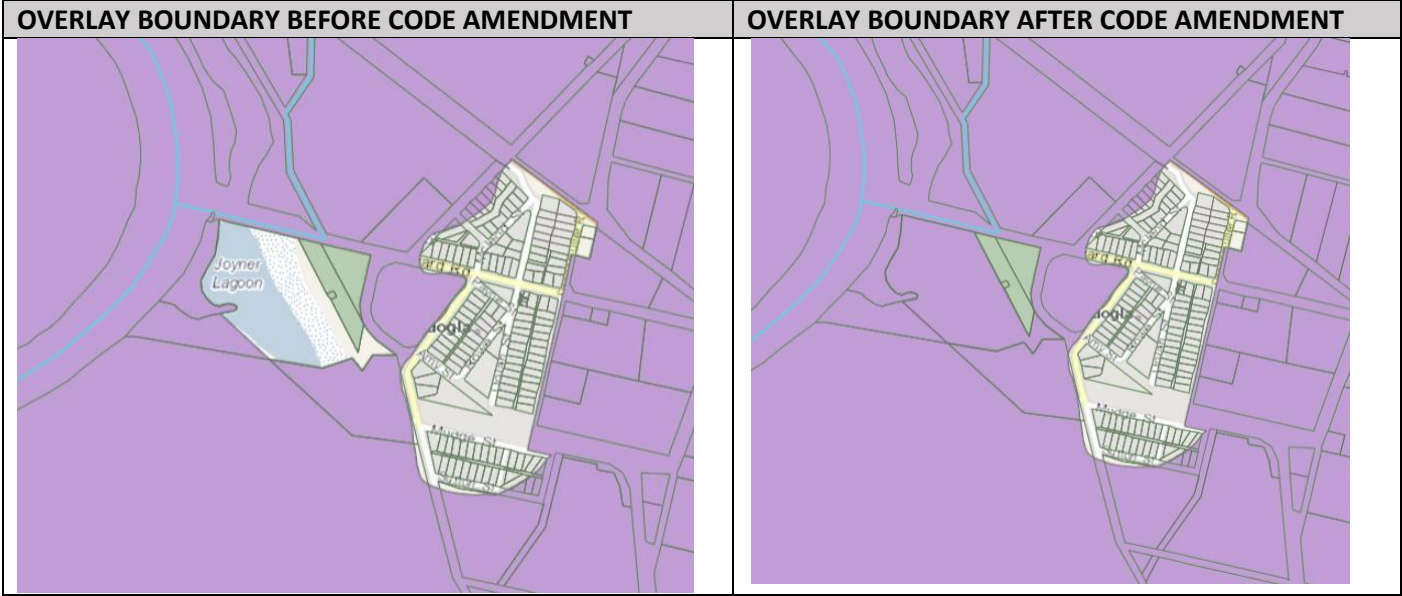
115	Tailem Bend	
116	Tailem Bend	
117	Tailem Bend	
118	Wellington	



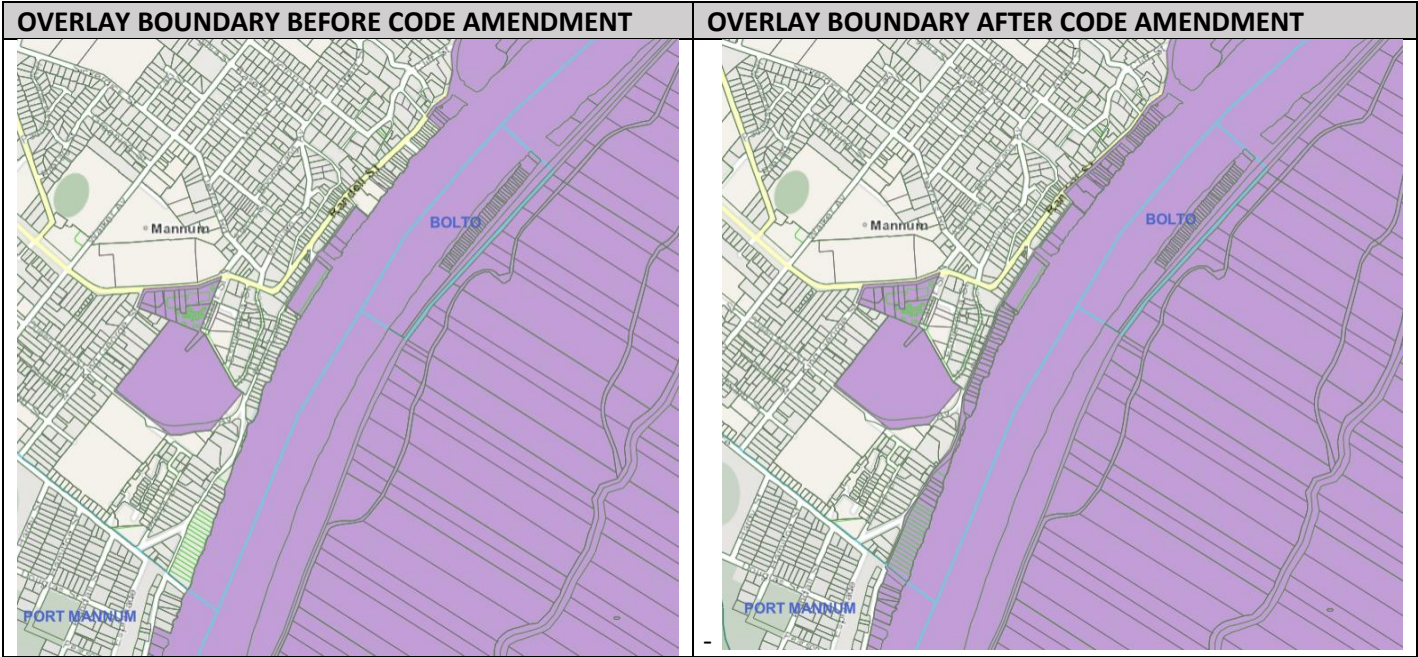
AMENDMENTS TO THE RIVER MURRAY FLOOD PLAIN PROTECTION AREA OVERLAY BOUNDARY

*Note- boundaries proposed to be expanded at these locations due to being inundated by the 2022/2023 Flood Event*

COBDOGLA



MANNUM



## ATTACHMENT C – STRATEGIC PLANNING OUTCOMES

### 1. State Planning Policies

The State Planning Policies (SPPs) require that the Principles of Good Planning are considered in the preparation of any designated instrument, including a Code Amendment.

#### **SPP Key Principles**

There are 16 SPPs that include Objectives, Policies and Principles for Statutory Instruments (including the Planning and Design Code). The most critical SPPs in the context of this Code Amendment are:

#### **SPP 5 – Climate Change**

##### **Principles for Statutory Instruments**

The Planning and Design Code should include a range of overlays that identify both the hazards that need to be considered when proposing new development and the features that should be protected due to their contribution to climate resilience, e.g. coastal dunes and natural environments that store carbon. Policies should allow for innovative adaptation technologies; promote climate-resilient buildings; improve the public realm; and identify areas suitable for green industries and carbon storage.

#### **SPP 15- Natural Hazards**

##### **Principles for Statutory Instruments**

The Planning and Design Code should include policy that mitigates the adverse impacts from natural hazards, particularly flood and fire. Overlays will be used to identify risks relating to bushfire, flooding and other natural hazards.

#### **Climate Change**

**Objective:** Provide for development that is climate ready so that our economy, communities and environment will be resilient to climate change impacts.

**SP 5.5** Avoid development in hazard-prone areas or, where unavoidable, ensure risks to people and property are mitigated to an acceptable or tolerable level through cost-effective measures.

**SP 5.8** Encourage decision-making that considers the impacts of climate change and that draws on the best available information.

**SP 5.9** Encourage development that does not increase our vulnerability to, or exacerbate the impacts of climate change and which makes the fullest possible contribution to mitigation.

## Natural Hazards

**Objective:** To build the resilience of communities, development and infrastructure from the adverse impacts of natural hazards.

**SP 15.1** Identify and minimise the risk to people, property and the environment from exposure to natural hazards including extreme heat events; bushfire; terrestrial and coastal flooding; soil erosion; drought; dune drift; acid sulfate soils; including taking into account the impacts of climate change.

**SP 15.2** Locate and design development in accordance with a risk hierarchy of 'avoid', 'accommodate' and 'adapt'.

## Code Amendment

**Outcome:** The Code Amendment proposes to introduce updated, contemporary policies to respond to the learnings of the recent River Murray flood event.

The updated policies seek assist in better protecting rebuilt dwellings and new development from the impacts of future flooding.

## 2. Regional Plans

### The Regional Plan

As with the SPPs, the directions set out in Regional Plans provide the long-term vision as well as setting the spatial patterns for future development in a region. This includes consideration of development being appropriately located to be adequately protected from natural hazards.

The Affected Area for the Code Amendment traverses multiple planning regions and therefore also multiple volumes of the Planning Strategy (interim Regional Plans) being:

- The Murray Mallee Regional Plan 2011
- The 30 Year Plan for Greater Adelaide 2010 and 2017 Update (as relevant to those parts of the River which traverse the Alexandrina Council and Rural City of Murray Bridge areas).
- Limestone Coast Regional Plan 2011 (for a relatively small section of the Coorong which traverses that Planning Region).

### Murray Mallee Regional Plan

#### *Principles*

- 3 – Protect people, property and environment from exposure to hazards.



## ***Policies***

3.1 - Design and plan for development to prevent the creation of hazards (including exposing residents to unacceptable noise and air pollution) and minimise the impacts of naturally occurring hazards, including flooding and sea level rise.

7.1 Protect, enhance and promote the assets that attract tourists and are of value to the community, including:

- caravan parks, campsites, motor homes facilities (that is, large sites with effluent disposal facilities) outside of the flood plain.

## **The 30 Year Plan for Greater Adelaide - 2017 Update**

### ***Emergency management and hazard avoidance Section***

## **Policies**

### **P118 –**

Minimise risk to people, property and the environment from exposure to hazards (including bushfire, terrestrial and coastal flooding, erosion, dune drift and acid sulphate soils) by designing and planning for development in accordance with a risk hierarchy of:

- avoidance
- adaptation
- protection.

### **Making it happen – in the planning system**

A66. Map hazards to be identified as overlays within the Planning and Design Code, including flood, bushfire and coastal hazards.

A67. Create a consistent policy response that is proportionate to the level of risk for all hazards to be included within the Planning and Design Code.

Other key levers to unlock opportunity:

- Utilise flood hazard mapping to increase the public's awareness of their exposure to flood risk and assist in risk assessments to identify the priority flood risks in the state.

## **Limestone Coast Regional Plan 2011**

### **Principle 2**

Protect people, property and the environment from exposure to hazards.

## Policies

2.1 Design and plan development to prevent the creation of hazards and to minimise the impacts of naturally occurring hazards.

2.3 Develop partnerships and agreements between state and local government (particularly with emergency services agencies) to address identified risks and hazards and protect the health and wellbeing of the community.

2.4 Integrate adaptation to climate change and disaster risk reduction and hazard avoidance policies, standards and actions into strategic plans, Development Plans and development assessment processes using best practice models to:

- reduce the social, environmental and economic impacts arising from extreme events
- achieve more consistent and rigorous decision making for long term land use planning aimed at reducing emergency and hazard risks
- enhance protection of critical infrastructure
- develop building standards and urban design approaches that create resilient environments for the future
- reduce risks while protecting natural areas and biodiversity.

2.5 Protect people, property and the environment from exposure to hazards (including flooding, erosion, dune drift and acid sulfate soils) by designing and planning for development in accordance with the following principles:

- Avoidance — avoid permanent development in and adjacent to areas subject to unacceptable risk from hazards
- Adaptation — design buildings and infrastructure to minimise risk in the long term

Protection — establish works to protect existing development or facilitate major development (including stormwater discharge management to accommodate higher tide levels).

## Code Amendment

**Outcome:** The Code Amendment proposes to introduce updated, contemporary policies to respond to the recorded flood levels and other learnings of the recent River Murray flood event. The policies will assist in better protecting rebuilt dwellings and new development from the impacts of future flooding.

This assists in addressing a likely increase in extreme weather events in future due to the impacts of Climate Change and is considered to be consistent with the identified policies and targets of the relevant strategic plans.

## ATTACHMENT D – INVESTIGATIONS

### **Minister's Flood Recovery Housing Roundtable**

The Minister for Planning convened a Flood Recovery Housing Roundtable with the construction and building sector. The membership comprised representatives of Master Builders Association, Housing Industry Association, Urban Development Institute Australia, Property Council, Unions, Local Government and relevant State Agencies (Flood Emergency Recovery Coordinator, SAFA, Dept. Environment & Water & SafeWork SA)

The Roundtable was convened to create a forum for discussion of issues facing recovery and reconstruction and seek government and industry agreement on pathways forward to address these.

The first meeting was held in February 2023, and discussed matters relating to planning approvals, planning policy improvements, insurance audits, certification of building works, regional supply chain and capacity issues.

Actions from the first meeting included:

- compiling spatial data about flood extent, zoning and tenure (freehold versus Crown lease); and
- identifying planning policy improvements and exploring development assessment support for impacted councils.

### **Working group with Council staff from affected Councils and other relevant State Agencies**

Throughout February to June 2023, meetings were held between PLUS and senior staff of Development Services Teams of impacted Councils. The Chief Executive Officer of the Murraylands and Riverlands Local Government Association also participated in the first meeting.

The purpose of these meetings was to discuss potential amendments to the Code and PDI Regulations which would assist with the recovery and minimise impacts from a future flood event in a way that embeds the learnings from the recent flood event.

The group discussed the key issues facing the rebuilding of dwellings and other structures and the priority policy amendments that may be required to ensure better flood resilience for an equivalent flood in future.

In principle support was obtained from the group for the agreed scope of the investigations for the Code Amendment.

### **Meeting with Infrastructure Service providers**

PLUS met with SA Power Networks on 31 March 2023 to obtain an understanding of the damage to existing electricity infrastructure, and ascertain what flood data they had collected during the flood event.

PLUS also worked closely with the Environment Protection Authority and Councils to understand the implications of wastewater disposal solutions in rebuilding of development following the flood.

### **Review and compile statistics and data on impacts of the flood event**

Working closely with the Flood Recovery Program led by the Department for Premier and Cabinet (DPC) to define the specific impacts of the flood event, such as:

- numbers of dwellings and buildings affected;
- locations of affected properties; and
- tenure and uses of properties (freehold versus leasehold/Crown ownership and permanent residences versus holiday use).

### **Spatially identifying the extent of the recent flood event**

PLUS obtained mapping data from the Department of Environment and Water (DEW) regarding the extent of the flood waters from the recent event. This assisted in informing the spatial application of minimum finished floor levels to impacted areas and amendments to the River Murray Flood Plain Protection Area Overlay boundaries along the extent of the River.

### **Design and materiality of undercroft areas of buildings.**

Through researching the learning of the recent flood event on different examples of design relating to undercroft areas of buildings and looking at other interstate or overseas jurisdictions for best practice in design for flood resilience, it was determined that the policy in relation to undercroft areas of elevated dwellings requires significant amendments.

The policy amendments included:

- increasing the maximum storage area criteria;
- the design of undercroft areas and the use of removable panels/doors;
- interaction between the planning policies and the BCA in respect to undercroft enclosures.

### **Review of application pathways**

A review of the current assessment pathways was undertaken so as to ensure simple forms of development are subject to a streamlined assessment pathway.

It was determined that the Accepted and Deemed-to-Satisfy assessment pathways for ancillary buildings within the Rural Shack Settlement Zone requires amendments.

### **River Murray flood mitigation planning: Assessment of flood consequences**

In December 2015, the Department of Environment, Water and Natural Resources (DEWNR), the Renmark Paringa Council (RPC) and the State Emergency Service undertook a joint project to mitigate flood risk along the River Murray in South Australia, improve pre-planning for future upgrades of levees and increase community awareness and resilience to flood disasters.

The project components undertaken in this report were:

- updated flood modelling and mapping
- flood frequency analysis to determine the likelihood of flooding
- flood consequence assessment
- spatial analysis to produce a GIS layer of levee bank information.

The project area included the River Murray between the South Australian (SA) border with Victoria/New South Wales and Wellington. Additional analysis was also undertaken for the town of Renmark, due to its vulnerability to flooding as a result of being entirely located on the River Murray flood plain and encircled by levee banks.

#### *Flood Modelling and Mapping*

Updated flood modelling was undertaken to prepare flood inundation maps for the SA portion of the River Murray for a range of river flows (measured at the SA border), with additional mapping produced for the Renmark Paringa Council area.

The following flows were included in this technical study:

- 130 000 ML/d  
This flow is the moderate flood threshold for the SA River Murray, and correlates to the flow at which properties would begin to be inundated in Renmark if the levee banks were not in place.
- 200 000 ML/d and 250 000 ML/d  
200 000 ML/d is the major flood threshold for the SA River Murray. These two flows were selected for analysis since they are near the estimated 1 in 100 annual exceedance probability (AEP) flood. These flows are also in the range at which levee bank overtopping is a risk in Renmark, and as such there may be substantial changes in damage for small changes in flow when levee banks begin to be overtopped.
- 341 000 ML/d  
This is the gauged flow of the 1956 flood, the largest flood on record for the SA River Murray. The 1956 flood level is commonly used for development planning purposes.

Flood mapping was undertaken which showed the inundation that could be expected at these flows. The maps assumed that inundation behind levee banks only occurs from overtopping and that the levee banks remain structurally sound during the flood event. The flood mapping also assumed that no remedial actions are taken during the flood events such as sandbagging or raising low points in levee crests.

#### *Flood frequency analysis to determine likelihood of flooding*

A flood frequency analysis was also undertaken to determine the likelihood of different sized floods occurring in the SA River Murray. Recent modelling for the Basin Plan was used as the basis for the analysis since this was considered to be the best representation of future conditions. However, it was noted that any flood

frequency analysis is a 'point in time' estimate only based on the best information available and that these estimates may change in future.

The analysis concluded that the 1 in 100 year event has a flow rate of 226 000 ML/d, while the 1956 event was estimated to be a 1 in 250 year event.

### **Review and consideration of interstate jurisdiction planning schemes**

A review was undertaken of the best practice planning interventions for flood resilience in interstate jurisdictions.

#### *North Central Flood Plain Management Strategy (Victoria)*

The purpose of this strategy was to provide a single, regional planning document for flood plain management and a high-level regional work program to guide future investment priorities.

The strategy was developed by the North Central Catchment Management Authority (NCCMA) in collaboration with local councils, water authorities, Victorian State Emergency Services (VICSES), Traditional Owners, Parks Victoria and local communities.

Four objectives for the strategy were defined:

1. Build resilient communities – through collating and sharing flood risk information.
2. Reduce existing flood risk – by implementing and maintaining flood mitigation infrastructure.
3. Avoid future risk – through effective strategic and statutory land use planning and building controls.
4. Manage residual risk – by improving and coordinating flood warning and response arrangements.

A region-wide risk assessment was undertaken, based on the probability and magnitude of flooding and its economic and social impact. The North Central region has a general trend of higher risk in the lower rural catchment areas, although risks to townships are experienced evenly across the catchment.

The existing treatment service levels were also assessed. This included planning schemes, mitigation infrastructure and total flood warning systems. These assessments, alongside the risk profile, have enabled deficiencies to be identified and priorities for flood plain management actions to be determined equitably.

Common flood plain management themes arising throughout this process included:

- inadequate coverage of high-quality flood mapping to inform planning scheme amendments and Municipal Flood Emergency Plans, and provide timely and meaningful warnings to the community
- varying expectations of the management of flood flow distributions and their interaction with the environment
- uncertainty about the roles and responsibilities of both agencies and the community



- management of residual floodwaters (including works by landholders)
- vegetation removal and waterway management
- cultural heritage
- safe access / transport routes.

### Risk Assessment Methodology

Department of Environment, Land, Water and Planning's rapid appraisal of flood risk methodology was used to assess flood risks at a regional level. The methodology identifies areas of similar land use and flood causation. The assessment then considers existing information for these areas (probability of flooding, potential cost of damages, and population density) as a means of quantifying risk. The result is a relative measure of risk between the areas.

Acknowledging the limitations of this methodology (e.g. the reliance on documented information, and inability to identify local or critical infrastructure), individual workshops were held with relevant officers from each LGA to review the results and identify risks that had not been considered. This involved identifying infrastructure and assets that are essential for the ongoing functionality of a town, locality, region or broader area, whether at risk of inundation or indirectly affected by flooding.

### Planning Scheme Controls

Planning schemes set out the policies and provisions for the use, development and protection of land, and are enabled under the *Planning and Environment Act, 1987*. The Victorian Planning Provisions (VPP) contain a number of controls that can guide the use and development of land that is affected by floodwaters. These controls include the Floodway Overlay (FO), the Land Subject to Inundation Overlay (LSIO), the Special Building Overlay (SBO), the Urban Floodway Zone (UFZ) and the Environmental Significance Overlay (ESO).

Flood-related planning controls are typically based on the 1% Annual Exceedance Probability (AEP) design flood extent. This is a flood that has a 1% chance of occurring (or being exceeded) every year. The extent and depth of the 1% AEP flood for an area can be determined through flood modelling, recorded flood extents and levels, and on-ground verification. This flood extent is then incorporated into the relevant planning scheme in the form of local policy and zones or overlays applying to affected land.

### Flood Mitigation Infrastructure

Flood mitigation infrastructure was considered to include treatments such as levees, channel modifications, bypass floodway's, retention basins, dams and floodgates. Furthermore, structural treatments were also considered to be effective in reducing flood risk at specific locations, however, it was noted that if not managed and maintained, they are liable to fail during a flood.

### **Review of existing Land Management Agreements (LMA)**

A review was undertaken of a broad sample of land management agreements which apply across the area affected by the draft Code Amendment. Generally, these agreements are with the relevant Council or the Minister for Transport and Urban Planning.

A brief summary of the requirements expressed within a number of these LMAs is outlined below:

*Bowhill – AG9666711 – Between Mid Murray Council & Developer*

- Setbacks from River are guided by Planning and Design Code
- 600mm side boundary setbacks
- Minimum setbacks prescribed from road frontages (ranges from 600mm to 3 metres)
- Fencing design is controlled by this agreement
- Power and Telecommunications are referenced
- Television and Radio Antennae and referenced
- Disposal of Effluent and Sewerage is required to comply with requirements of the SA Health Commission (or such other body or agency).

*Blanchetown – AG9809608 – Between Minister for Transport and Urban Planning and Developer*

- Controls to limit the clearance of native vegetation.
- Controls types of fencing.
- Future development to be sited behind a development line (if applied to the site).
- Future development to be sited within a building envelope (if applied to the site).
- Applies responsibility on land owner to be aware that they are building in a flood prone area.
- Replacement buildings to be in the same location on the site or consistent with building envelope/building line (if relevant)
- Requirement of built form to be connected to an approved effluent disposal system.

*Bolto – AG8695812 - Between Minister for Transport and Urban Planning and Developer*

- Controls to limit the clearance of native vegetation.
- Controls types of fencing.
- Future development to be sited behind a development line (if applied to the site).
- Future development to be sited within a building envelope (if applied to the site).
- Applies responsibility on land owner to be aware that they are building in a flood prone area.
- Replacement buildings to be in the same location on the site or consistent with building envelope/building line (if relevant)
- Requirement of built form to be connected to an approved effluent disposal system.

*Caloote Landing – AG8853571 – Between Minister for Transport and Urban Planning and Developer*

- Controls to limit the clearance of native vegetation.
- Future development to be sited behind a development line (if applied to the site).
- Future development to be sited within a building envelope (if applied to the site).
- Applies responsibility on land owner to be aware that they are building in a flood prone area.
- Replacement buildings to be in the same location on the site or consistent with building envelope/building line (if relevant)
- Requirement of built form to be connected to an approved effluent disposal system.

*Younghusband – AG 10430501 – Between Mid Murray Council & Developer*

- Limit on the allotments only for the use of residential purposes.
- Limit the number of outbuildings on the site and size.
- Development guidelines, applying to:
  - The number of outbuildings onsite;
  - The size of outbuildings;
  - Siting of outbuildings so as to be unobtrusive;
  - Materials for fencing;
- land division or realignments of the existing allotments not being permitted.

*Julanka Holdings – AG 10610305 - Between Mid Murray Council & Developer*

- Limiting the construction of any boat ramp on the land in addition to the existing boat ramp.
- Specifying that the existing boat ramp is available for use by any person.

*Sprinkler Drive, Walker Flat – AG8739027 - Between Minister for Transport and Urban Planning and Developer*

- Controls to limit the clearance of native vegetation.
- Controls types of fencing.
- Future development to be sited behind a development line (if applied to the site).
- Future development to be sited within a building envelope (if applied to the site).
- Applies responsibility on land owner to be aware that they are building in a flood prone area.
- Replacement buildings to be in the same location on the site or consistent with building envelope/building line (if relevant)
- Requirement of built form to be connected to an approved effluent disposal system.

*Mannum Waters – AG11773946 – Between Mid Murray Council and the Developer*

- Controls in respect to fencing of allotments.
- Controls in respect to the attachment of structures to a jetty.
- Limitations in respect to the mooring of vessels to the allotments.

- Limitations in respect to the occupation of vessels moored to the allotments.
- Obligations upon owners not to pollute the River Murray.
- Limitations in respect to the storage of hazardous chemicals on the allotments and management of spills.
- Requirements in respect to the disposal of refuse and waste.
- Management requirements in respect to soil erosion.
- Limitations in respect to maintaining land and not removing native vegetation.
- Limitations in respect to repairing vessels adjacent the allotments.

*Jane Eliza (New Landing Way) – AG9096977 – Between Renmark Paringa Council and the land owner/developer*

- Requirement to seek approval for any development.
- Documentation requirements for new development applications.
- Limitation on the location and type of fencing.
- Minimum 6 metre setback for an outbuilding from a road boundary.
- Maximum height of courtyard walls and criteria in respect to siting.
- Limitations in respect to excavation of land within 28.5m of waterway boundary.
- Limitations in respect to types of built form permitted within 28.5m of waterway boundary.
- Limitation in respect to mooring and anchoring of houseboat or vessels to land.
- Requirement for the construction of a hard paved driveway.
- Requirement for at least one covered car parking space.
- Maximum driveway width requirement of 5.5 metres.
- Limitation in respect to size of vehicles permitted within the estate or parking upon the land.
- Limitations in respect to types of building materials for built form.
- Specific landscaping obligations.

*Interaction of agreements and proposed Code Policies*

The existing agreements principally seemed to have been developed so as to manage the clearance of native vegetation, ensure wastewater systems do not result in pollution, and control the siting of built form, so as to minimise amenity and character impacts upon the river corridor.

The proposed new policy appears to be relatively consistent with the intent of the land management agreements which apply throughout the draft Code Amendment area. However, it is clear that the proposed policy will be at odds with setback and siting criteria expressed within a number of State Government managed LMA's, which have specific references to building envelopes and building lines, so as to manage visual amenity impacts. It is however noted that PLUS have waived the building envelope/building line criteria a number of times in the past, due to the fact the criteria is inconsistent with current Code assessment policy as well.

In order to manage this conflict, certain developments will need to be accompanied with written requests seeking to waive specific LMA criteria, where at odds with new policies of the Planning and Design Code.