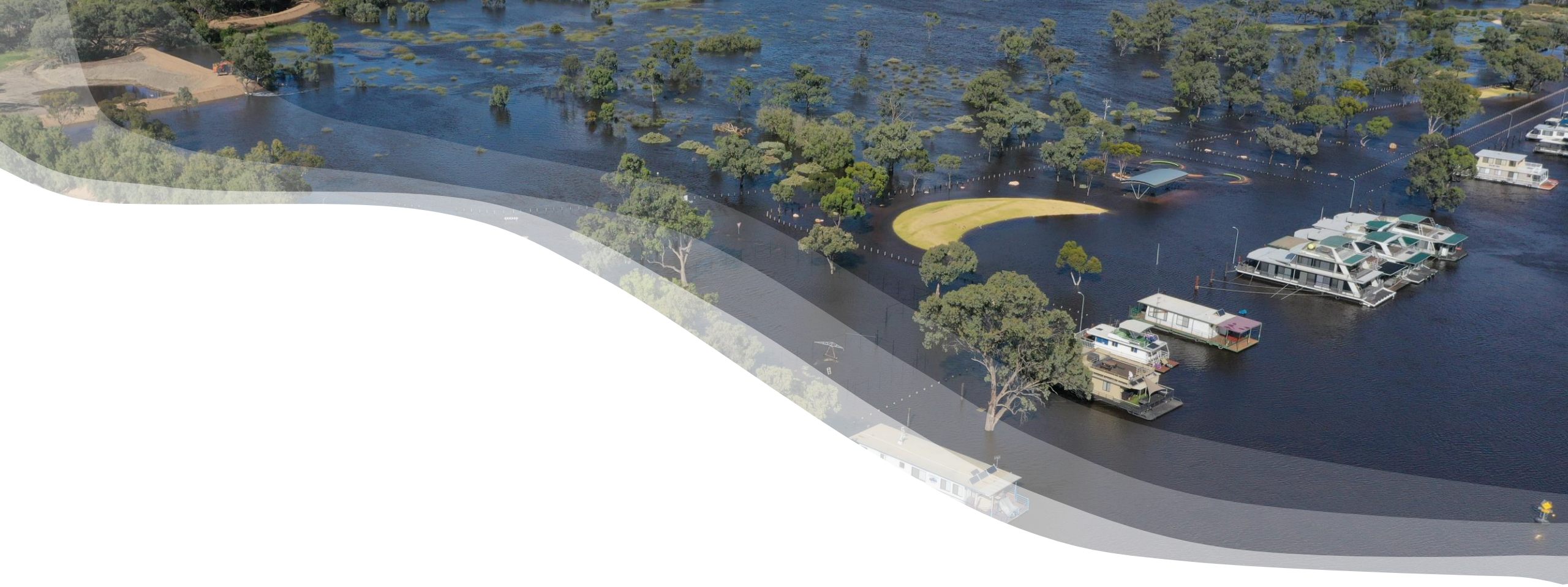




LWDC Constraints Package Concept Commentary

Key Terms & Definitions

Rock Toe	The lowest layer of rock placed at the base of a riverbank or structure to prevent erosion from flowing water and provide stability to upper layers.
Geotextile	A permeable fabric used beneath rock, sandbags, or soil to prevent erosion, allow water flow, and separate materials.
Rock Beaching	The placement of graded rock along a riverbank to protect against wave action and flow erosion, often tied into vegetation for stability.
Sandbag Toe Protection	Sandbags placed along the toe of the bank, wrapped in erosion-control textiles, to absorb wave energy and protect the base of the slope.
Groynes	Rock or timber structures built perpendicular to the bank to reduce flow velocity, trap sediment, and protect against erosion.
Retaining Wall	A structural wall that holds back soil or water, providing mechanical protection against erosion and allowing flatter bank profiles.
Grassroots Matting	A biodegradable mat that stabilises soil and supports vegetation growth on slopes and newly treated banks.
Laid Turf	Pre-grown grass installed on stabilised surfaces to immediately reduce erosion and improve amenity.
Erosion Textile	Durable fabric designed to withstand hydraulic loading, protecting soil from erosion while allowing plant roots to grow through.



Bank Stabilisation: Paisley

Concept of the design:

The two main considered option for Paisley are sandbag row along the toe of the bank wrapped in an erosion textile that can withstand flood impacts and support vegetation. The wave erosion caused by consistent high winds rules out other method such as groynes and bays. Rock beaching has been considered to tie into native vegetation to create an offset for recreational users. There is also an option to reduce bank batter and create a retaining wall at high flow level to mechanically protect the bank during high flows and reduce shear stresses from prolonged floods on exposed bank surfaces.

Potential Materials:

- Rock beaching against native vegetation boundaries
- Sandbag and erosion textiles
- Grassroots matting and laid turf
- Retaining wall products

User Groups:

- Public, Blanchetown Caravan Park, Murray Princess

Considerations

- Paisley is utilised by ski boat and jet ski activities.
- Can be densely crowed with boats during holiday and break periods through out summer.
- Paisley is exposed to strong wave erosion during high wind days.



Bank Stabilisation: Ramco Point

Concept of the design:

The preferred stabilisation approach for the Ramco riverbank involves a continuous row of sandbags placed along the toe of the bank, encased in a durable erosion-control textile capable of withstanding hydraulic loading and flood impacts while supporting vegetation growth. Above the reinforced toe, a grassed slope will extend beyond the inundation level to reduce surface erosion, enhance stability, and maintain the natural visual character of the riverbank.

In sections exposed to higher flow velocities, rock beaching will be incorporated to provide additional protection and tie into existing native vegetation, promoting habitat integration and long-term resilience. The stabilisation works will also align with the proposed boat ramp upgrade, ensuring a consistent and accessible riverbank profile that supports both structural integrity and recreational use.

Potential Materials:

- Rock beaching
- Sandbag and erosion textiles
- Grassroots matting and laid turf

User Groups:

- Public

Considerations

- Ramco bank is utilised by ski boat and jet ski activities.
- There is a carpark and boat ramp tie in to consider.
- Ramco is a short bank and boat ramp that needs to be protected.



Bank Stabilisation: Waikerie

Concept of the design:

- Stage 1: Toe protection with textiles
- Stage 2: Rock beach protection and fishing area that ties into a rock groyne bay area for swimmers.
- Stage 3: Houseboat section. Toe protection.
- Stage 4: Toe protection with textiles.
- Stage 5: Toe protection with textiles. Repair retaining wall adjacent to native vegetation. Tie in boat ramp nicely with remediation option.

Potential Materials:

- Stage 1: Geotextile sand containers and erosion textiles, grassroots matting and laid turf.
- Stage 2: Rock beaching, groynes, laid turf, native vegetation plantings.
- Stage 3: Geotextile sand containers and erosion textiles, grassroots matting and laid turf.
- Stage 4: Geotextile sand containers and erosion textiles, grassroots matting and laid turf
- Stage 5: Geotextile sand containers and erosion textiles, grassroots matting and laid turf, rock beaching, rock protection.

User Groups:

- Public, Rivergum Cruises, Waikerie Rowing Club, Waikerie Football Club, Echo Holiday Park - Waikerie, Waikerie Houseboat Moorings

Considerations:

- Waikerie has a diverse user group for recreation activities, boats, fishing, swimmers, houseboats.
- Long stretches of bank. Will need to consider costings of proposed solutions.



Loxton Wharf

Concept of the design:

The concept proposes a new wharf structure at Loxton to provide a safe and functional river access point for commercial and recreational vessels, while enhancing the amenity of the riverfront precinct. The wharf will cater to houseboats, small craft, and tourism vessels, providing a modern facility that integrates with the existing public reserve and pedestrian network.

The design will consider flood-resilient structural systems and modular construction to accommodate fluctuating river levels and ease of maintenance. Opportunities exist to integrate viewing platforms, shade structures, and access ramps to improve usability and inclusivity for all users. The wharf should complement the riverbank setting and surrounding open space through material selection and landscape treatment.

Potential Materials:

- Reinforced steel piled substructure
- Concrete decking with non-slip surfacing
- Galvanised steel or aluminum handrails and balustrades
- Fenders and mooring bollards for vessel tie-off
- Aluminum gangways
- Integrated lighting and electrical supply for operational use

User Groups:

- Public

Considerations

The Loxton Wharf will act as a focal point for river activity and community interaction. Environmental sensitivities, including protection of riparian vegetation and minimisation of in-river disturbance during construction, should be addressed. Coordination with future bank treatments and public open space improvements will ensure cohesive riverfront development.



Public Amenity: Paisley

Concept of the design:

The existing toilet block requires demolition, disposal and a new modular amenities block installed with all required services connected. Currently potable water supply and power is available on site so waste will need to be an off-grid system with waste storage tank for sewerage collection. The waste tank will be designed to a capacity based The waste tank will be designed to a capacity based on SA Health guidelines and feedback, or 4 weeks (during peak use periods), whichever is the larger.

SA Health guidelines and feedback, or 4 weeks (during peak use periods), whichever is the larger volume. Based on feedback and the site inspection, the current location of the amenities block at Paisley is problematic due to the busy road crossing at the entrance of the caravan park and does not satisfy CPTED (Crime Prevention Through Environmental Design) guidance.



Current Amenities block in relation to the road and caravan park



Public Amenity: Paisley

Concept Locations

The existing location and an additional three new options have been proposed that should be in an improved position and improve the community safety and usability of the amenities.

Concept location 2



Concept location 3



Concept location 4



Public Amenity: Ramco Point

Concept of the design:

The location of the existing block at Ramco (picture inset) is suitable so the new block will be in the same position.

The existing toilet block requires demolition, disposal and a new modular amenities block installed, with all required services connected. Currently only river water is available on site so power and waste will need to be off-grid systems with a waste storage tank for sewerage collection and a solar and power system.

The waste tank will be designed to a capacity based on SA Health guidelines and feedback, or 4 weeks (during peak use periods), whichever is the larger.

The rainwater tank will contain enough capacity for 4 weeks of peak period use and can be topped up by alternate water sources, such as the lawn irrigation system.

The toilet blocks can run entirely off-grid with solar and battery storage systems.





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