

7 Donnybrook

7.1 Council Controlled Areas and Current Condition

Council controlled land and shoreline types within the Donnybrook study area are indicated in Figure 7-1. The study area is characterised by open public space with grassy foreshore and small erosion scarp in most locations. The area primarily supports recreational boating and fishing and includes a Council-owned Caravan Park. The foreshore includes playground equipment and picnic facilities and is likely to be used by casual walkers. The study area is adjacent to a declared Marine Park (Conservation Park Zone) with a small shorebird habitat is located at the northern extent of the study area (refer Appendix A).

Examples of the shoreline condition throughout Donnybrook are shown in Figure 7-2. The shoreline is generally free of formalised structures however rock, timber and/or concrete have been used in the northern half of the study area to resist shoreline erosion at the Caravan Park foreshore (refer Figure 7-2d and Figure 7-2e). The original placement of these materials many years ago was unlikely to have been part of an approved shoreline management strategy.

North of the Caravan Park the foreshore buffer narrows to within 10m of the road (Esplanade North, refer Figure 7-2a). Mangroves provide shelter at most locations and there does not appear to be an immediate erosion threat to the sealed road or other assets. A previous storm tide assessment suggests this area may be inundated during design storm events (Cardno Lawson Treloar, 2009).

There are two small jetties within the study area understood to be privately owned:

- Extending from the Caravan Park foreshore (with public access); and
- Extending from the Esplanade North foreshore (closed access).

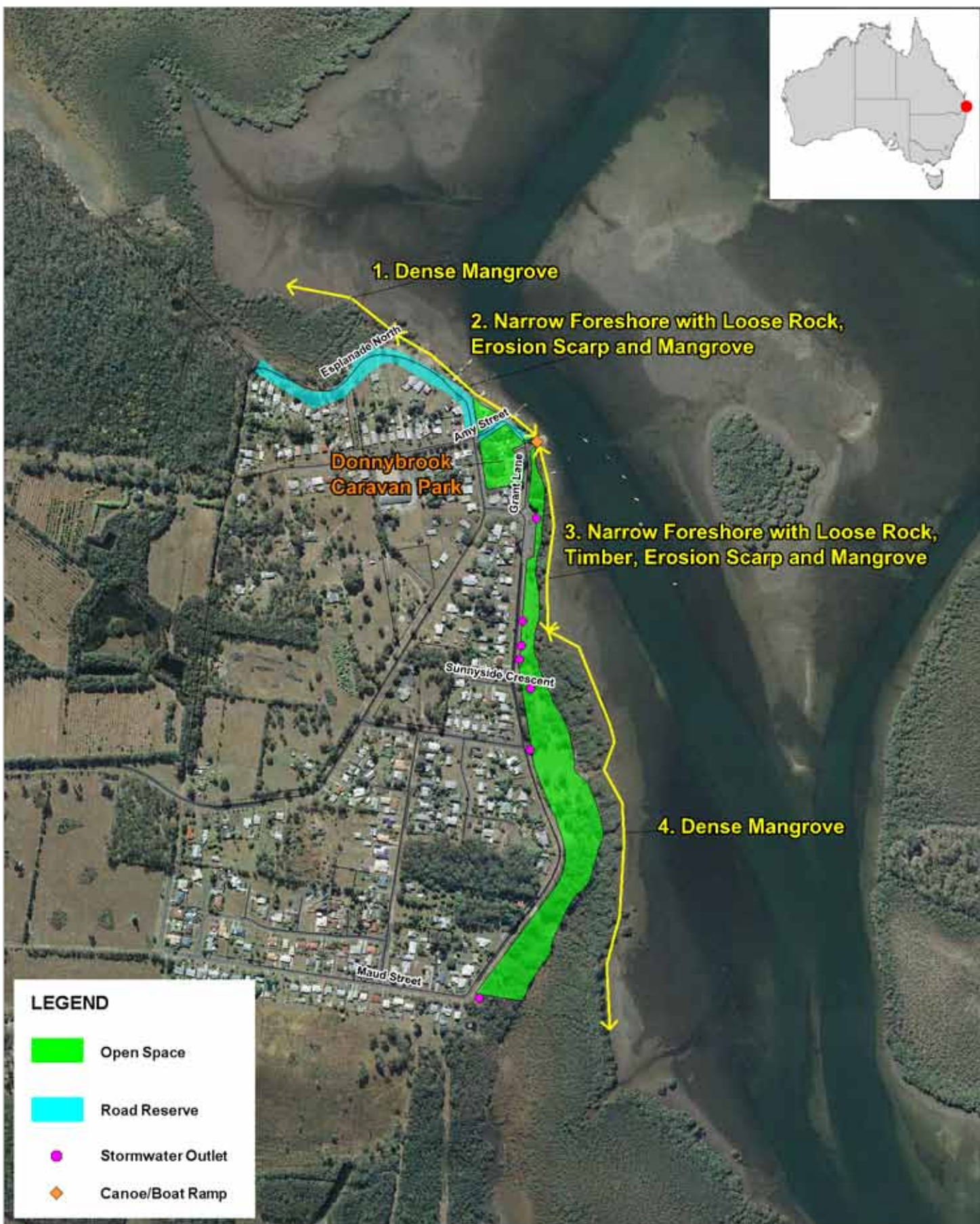
Both structures are aging and are likely to require significant repair to remain safe and usable. The poor condition of Esplanade North jetty was evident during a site visit in early 2014 with the immediate area littered with old boating equipment and debris (refer Figure 7-2b).

7.1.1 Shoreline Vegetation

Shoreline vegetation along the southern half, and northern most tip, of the Donnybrook unit is comprised of a wide, dense mangrove community dominated by *Avicennia marina*. Other mangrove species, such as *Aegiceras corniculatum* and *Excoecaria agallocha*, are also notable. A narrow, discontinuous mangrove fringe is present along parts of the rest of Donnybrook. Where this mangrove fringe is discontinuous, vegetation along parts of this shoreline (i.e. where mangrove are absent) is typically sparse and sometimes in poor condition. In these sections, shoreline vegetation typically consists of one of the following:

- Mown grass with isolated trees (e.g. *Eucalypts*) in adjacent public space;
- *Casuarinas*, observed as a single row of large trees along the shoreline in some places;
- Occasional *Hibiscus* or *Melaleuca* along the shoreline; and
- Weedy vines and herbs, encroaching on mangroves and other adjacent shoreline vegetation.

Note that saltcouch (*Sporobolus virginicus*) was observed in good condition (i.e. healthy and unmown) on sandy shores behind some mangroves.



Title: **Donnybrook Beach Unit - Council Controlled Shoreline Areas and Current Condition**

Figure: **7-1** Rev: **A**

BMT WBM endeavours to ensure that the information provided in this map is correct at the time of publication. BMT WBM does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

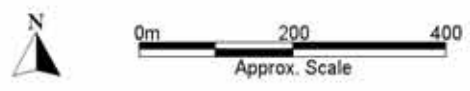




Figure 7-2 Example Shoreline Condition throughout Donnybrook Study Area: a) Sandy Shore with Erosion Scarp; b) Boat Shed; c) Loose Rock and Mangrove; d) Deteriorating Rock, Concrete and Timber; e) Deteriorating Rock and Timber; f) Loose Rock and Erosion Scarp

7.2 Shoreline Management Approaches Considered

All generic management options described in the Stage 1 report (refer Chapter 3) have been considered for the Donnybrook shoreline and are summarised in Table 7-1. Through assessment of existing assets and the values associated with the Donnybrook study area the following options were shortlisted:

- Planned Retreat (relocation of playground equipment);
- Seawall; and
- Mangrove and Coastal Vegetation Management.

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Table 7-1 Donnybrook Shoreline Management Options Assessment

Generic Options	Advantages	Disadvantages	Comments
1. Maintain Status Quo	a) No additional capital cost (part of routine maintenance)	a) Potential loss of foreshore amenity and risk to public safety b) Ongoing maintenance commitment	Not suitable for locations under immediate erosion threat
2. Planned Retreat	a) Mitigates the immediate shoreline erosion problem b) Shoreline can respond naturally to erosion events	a) Loss of public land with significant social value	Relocation of playground equipment
3. Shoreline Nourishment	a) Maintains beach amenity	a) High capital and maintenance costs, requires ongoing commitment	No considered viable; constraints associated with declared FHA
4. Seawall	a) Provide effective erosion control b) Provide direct property protection	a) Decreased beach amenity b) High capital and maintenance cost	Informal seawall upgrade and realignment if relocation of assets not supported
5. Groyne	NA	NA	Not considered suitable at this this location; not likely to be effective due to low sediment transport rates
6. Offshore Breakwaters or Submerged Reef	NA	NA	Not considered suitable at this location; not likely to be effective due to existing wide tidal flats; marine park constraints
7. Mangrove and Coastal Vegetation Management	a) Maintains natural buffer to shoreline erosion b) Reduces energy reaching the shoreline during storm events	a) Ongoing commitment	Maintenance of coastal vegetation to provide ongoing stabilisation of the shoreline and foreshore areas

7.3 Proposed Management Strategy

Removal of previous timber, rock and concrete erosion control measures is recommended throughout the areas adjacent to the boat ramp and Caravan Park. These materials are not likely to be performing as intended and better erosion control outcomes could be achieved through shoreline realignment, foreshore landscaping and revegetation activities.

The Donnybrook Open Space Master Plan Report (Place Planning and Design, 2012) was recently prepared and provides recommendations for enhancing recreational and environmental values throughout the area. The Master Plan Stage 2 (Central Foreshore Parkland) works involved relocating the playground equipment at the Caravan Park foreshore in order to create a multi-purpose open space. This action would also allow natural shoreline processes to continue without the need to intervene in the short to medium term and is therefore strongly supported in this study. Following relocation of the playground equipment, general landscaping of the foreshore, construction of a foreshore pathway and replanting with native plant species will contribute to stabilising the shoreline.

A key recommendation in the Master Plan was to investigate the possible relocation of the Caravan Park to create a less constrained, useable public space. Long term, this action is also supported and should be considered as part of Council's future planning scheme. If the relocation of assets is not adopted then seawalls may be required to protect the present foreshore and shoreline alignment adjacent to the boat ramp and Caravan Park.

Dense mangrove communities exist south of the boat ramp and provide some buffer to shoreline erosion. Additional shoreline stabilisation with vegetation is recommended along the Esplanade South shoreline and could be undertaken as part of the proposed Master Plan Stage 3 (Foreshore Parkland North) works.

7.3.1 Vegetation Management Considerations

Vegetation management in the Donnybrook section would ideally concentrate on rehabilitating and revegetating eroding natural shorelines (i.e. those where seawalls are absent and are not proposed as part of future works). This would aim to stabilise the shoreline in these areas and enhance its resilience to future erosion. Such works would typically require a combination of reprofiling, planting and maintenance. Care to incorporate appropriate weed management would also be particularly pertinent at locations where weeds have been observed to be undermining existing vegetation condition. Measures to manage pedestrian access would complement erosion management incentives and protect rehabilitation works from pedestrian disturbance.



The Open Space Plan Master Plan for Donnybrook (Place Design 2012) provides a sound basis on which to plan any additional vegetation works that are required for the purposes of shoreline erosion management. Ideally, shoreline vegetation management should complement and seamlessly integrate with that already designed as part of the 'foreshore parkland' aspects of the Master Plan.

7.3.2 Summary



The proposed management strategy for the shoreline sections defined in Figure 7-1 are summarised in Table 7-2. Promoted management activities for Donnybrook focus on the removal of redundant erosion control measures and reinstating the pre-existing condition through shoreline revegetation.

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Table 7-2 Donnybrook Shoreline Management Summary

Shoreline Section Number	Existing Condition	Proposed Management Strategy
<p>1. The Esplanade North – approx. 210m</p> 	<ul style="list-style-type: none"> • Grassy foreshore with dense mangrove community • Shorebird habitat 	<ul style="list-style-type: none"> • Maintain status quo
<p>2. The Esplanade North-Caravan Park – approx. 300m</p> 	<ul style="list-style-type: none"> • Erosion scarp and loosely placed rock rubble • Rock, concrete and timber in sections south of jetty 	<ul style="list-style-type: none"> • Relocate playground equipment • Revegetation and foreshore landscaping, construction of foreshore pathway and shoreline stabilisation with native vegetation • If threat to permanent infrastructure becomes unacceptable, plan for enhanced management action through formalised seawall

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Shoreline Section Number	Existing Condition	Proposed Management Strategy
<p>3. Grant Ln-The Esplanade South – approx. 320m</p> 	<ul style="list-style-type: none"> • Erosion scarp and loosely placed rock rubble • Rock, concrete and timber in sections south of boat ramp 	<ul style="list-style-type: none"> • Foreshore landscaping, construction of foreshore pathway and shoreline stabilisation with native vegetation
<p>4. The Esplanade South – approx. 740m</p> 	<ul style="list-style-type: none"> • Erosion scarp and loosely placed rock rubble • Wide grassy foreshore • Dense mangrove toward south • No significant assets within erosion prone area 	<ul style="list-style-type: none"> • Sort loose rock at shoreline • Revegetation and ongoing foreshore and vegetation management

7.4 Cost Estimates

The capital costs estimates associated with the rehabilitation and revegetation of eroding shorelines at Donnybrook, including design, approvals, clearing of redundant materials, reprofiling and planting, are as follows:

- Section 2 (The Esplanade North and Caravan Park): \$150,000; and
- Section 3 (Grant Lane-The Esplanade South): \$100,000.

An additional estimated cost of up to \$25,000 for the relocation (setback) of playground equipment is also anticipated.

Cost savings associated with the proposed shoreline erosion management works are expected if undertaken in conjunction with complementary the Stage 2 and Stage 3 foreshore works described in The Donnybrook Open Space Master Plan Report (Place Planning and Design, 2012).

7.5 Approvals Plan

The approvals required for the Donnybrook study area relate to the potential development of a seawall at Sections 2 and 3 (only triggered if the threat to permanent infrastructure became unacceptable). This is prescribed tidal works and requires a development approval under *SPA*. Prescribed tidal works must comply with the requirements of the prescribed tidal works IDAS code in Schedule 4A of the *CMPR*. This development will require a marine parks permit under the *MPA*.

If the disturbance of marine plants is required to perform recommended works, a development permit may be required under *SPA* unless works are self-assessable in accordance with MP06.

Retreat and relocation of Council assets may require support from existing MBRC policy regarding asset management. The use of a reserve for coastal management, buffer and beach protection purposes (including as an erosion buffer) is permissible if this is consistent with the community purposes attaching to the reserve at the time of declaration. Council may apply to have these purposes changed under the *Land Act 1994* to further support foreshore management options.

Moreton Bay Marine Park permit

As the Moreton Bay Marine Park covers all tidal land and waters in this beach unit, coastal engineering works will also require a marine park permit under the *MPA*. The permit application would need to demonstrate the consistency of the development with the objects for the conservation park zone, as listed under the *MPR* Schedule 1, s4. These are:

- To provide for the conservation of the areas of the marine park within the zone; and
- Subject to this objective, to provide opportunities for reasonable use and enjoyment, including, for example, limited extractive use, of the areas.

An application for a marine park permit is considered by DNPRSR.