



Sand Management Plan for Beachport Town Beaches



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1. Introduction & Statutory Context

The town beaches of Beachport have been heavily modified by human influence since the 1940's. Rock groynes, seawalls and revetment works have been added along the beach since this time, with the intention of stabilising the beaches and reducing erosion. These structures have been modified, added to and extended over time.

The Rivoli Bay Study by Worley Parsons (2015) describes the coastal processes of the bay:

“The local wave climate drives littoral drift northward along the foreshore at Beachport, as evidenced by build-up of sand on the southern faces of the groynes installed along the Beachport foreshore”.

The Rivoli Bay Study also describes the effectiveness of these structures in stabilising the shoreline. The groynes are considered to be partially effective, however some beachfront areas continue to suffer erosion (Worley Parsons 2015).

“In general, the scale of the sand transport processes is very much larger than the scale of the groyne field designed to stabilise the system.”

The coastal environment is dynamic, requiring a strategic approach and adaptive management. Initially, this Sand Management Plan focused on the quantity of sand and trigger points for relocation of sand from Beaches 4 and 5 and was developed as a condition of development plan consent for the extension of the Beachport Boat Ramp Breakwater (DA010/U088/11).

Condition 4 provides that:

“The Council must implement at its cost the approved Sand Management Plan prepared by Magryn and Associates Pty Ltd and marked Exhibit B, as amended from time to time in accordance with the procedure established under Part 17 of the Plan.”

By virtue of section 42 of the *Development Act, 1993*, conditions are binding on, and enforceable against, the person by whom the development is undertaken, any person who acquires the benefit of the decision and the owners and occupiers of the land on which the development is undertaken.

The extension to the breakwater was completed in November 2014 and Council has undertaken sand relocation activities in accordance with the plan.

The Rivoli Bay Study provided Council with a greater understanding of the coastal processes affecting the Beachport town beaches. Following consultation with the Coast Protection Board, this revised Sand Management Plan shifts the focus from where sand is abundant to where there is a deficit of sand. This concept is described in the Objectives below.

2. Objectives of Sand Management Plan

The Objectives of this Sand Management Plan are to:

1. Monitor and manage the effectiveness and impacts of groynes including the boat ramp breakwater by relocating sand to beaches at risk or showing signs of erosion;
2. Remove sand from the boat ramp basin to maintain appropriate service standards; and
3. Minimise the impacts of sand relocation activities on residents, visitors, businesses and the environment.

3. Naming conventions

The beaches and groynes have been numbered for ease of reference in documents and operations. **Figure 1** shows the numbering and a description is provided in the table below.

Table 1: Beach and groyne names and locations

Beach No.	Location	Length (m)
1	Adjacent the boat yard at Glen Point	100
2	Northern most end of boat yard	85
3	Opposite South Terrace	100
4	Opposite French Street	120
5	Between French & Blacketer Streets at the south end of the boat ramp	100
6	Opposite Blacketer Street. This beach has the boat ramp at its southern end and is covered with revetment works	140
7	Opposite Lagoon Road, in front of the Harbourmaster's property and the rotunda	100
8	From the south side of the Jetty to opposite Alfred Court	180
9	Opposite the southern end of the Caravan Park	160
10	Opposite the northern end Caravan Park	140
11	Adjacent (south west of) the outlet to Lake George	210

Figure 1: Numbering of beaches and groynes



Image Date: 19 April 2016

Source: Google Earth

4. Background

4.1. Areas at Risk

Due to the wide spacing between Groynes 8 and 9, there is a significant erosion risk on the northern side of Groyne 8. The timber seawall in this location is heavily impacted by wave energy and often no beach is visible on the southern end of Beach 8.

Erosion has also been observed on the southern ends of Beach 7 and 9.

Erosion on the northern end of Beach 5 has also been observed. In 2015, sand was pushed up from the southern end of the beach to the northern end behind the boardwalk. To date, this has provided sufficient protection for the remaining vegetation and carpark.



4.2. Stores of Sand

Beach 4 has significant sand storage capacity, which can be utilised to top up other beaches as required. At times, there is also additional sand on the northern end of Beach 5 that could be used to address erosion in other areas.

5. Operational Requirements

In considering the appeal against development approval for the extension of the boat ramp breakwater, the ERD Court recognised the need to minimise the impacts of noise, dust and odour from sand movements. The following operational requirements aim to address these issues.

5.1. Sand Relocation Plan

To minimise the impact on residents and ensure operations are conducted in the most efficient way, a sand relocation plan will be prepared for each event, prior to the movement of sand. The plan will include:

- The locations where sand will be collected
- The locations where sand will be deposited
- A risk assessment including traffic management, restricting public access, signage.
- The plan to notify the Harbourmaster's property, Beachport Beachcare Group, Coast Protection Board and place notice on Council's website and Facebook page
- Copy of any EPA licence or Coast Protection Board conditions
- Requirements for photos pre and post sand movement
- The planned dates and time of such movement
- The estimated cost of the operation
- Details of induction of contractors and Council staff

Following each operation, the sand relocation plan will be updated to include:

- The actual locations where sand was collected and deposited
- Photographs (including aerial images)
- The actual dates
- The actual cost of the operation.
- Estimated volumes relocated

5.2. Notification

Prior to sand relocation works commencing, notification will be given by:

- Email to the owner of the Harbourmaster's property (or nominated contact)
- Email to the Coast Protection Board
- Email to Beachport Beachcare Group (nominated contact)
- Notice on Council's website and Facebook page

5.3. General Conditions of Operation

In addition to the sand relocation plan and any conditions imposed by the EPA or Coast Protection Board, the following conditions will minimise the impact on local residents and the environment:

- Heavy vehicles and machinery will not be stored overnight or on weekends within 50m of the Harbourmaster's property;
- Sand placed on any beach will be substantially free of weed and vegetative matter including seagrass and kelp, animal or fish matter, rocks, gravel or stones.
- Whenever possible, sand deposited at the southern end of Beach 7 should be clean and damp (as opposed to dry or wet) so as to minimise the potential for nuisance caused by dust or odour to be experienced at the Harbourmaster's property.
- All contractors and relevant Council employees and volunteers shall be made aware of the conditions of consent and the Sand Management Plan.
- The Sand Management Plan is to be available on Council's website.

5.4. Relocation of Sand from Beach to Beach

Council is committed to protecting and restoring the beaches showing signs or at risk of erosion such as the southern ends of Beaches 7, 8 and 9 by relocating sand from those beaches that store sand, such as Beach 4 and at times Beach 5. Based on the monitoring (see Section 7 below), triggers for relocation of sand and suitable interventions will be determined in consultation with the Coastal Management Branch and reviewed periodically.

Sand should not be removed from the town beach system, only relocated. For these beach to beach works, the following operating requirements will apply:

- All machinery and equipment involved in the relocation of sand from beach to beach must not be operated before 7.30am on any weekday and not on weekends or public holidays. All works must conclude at or before 6pm on any given day.
- Preference will be given to collection and carting of dry sand (including damp sand collected from the beach), rather than sand collected below the water line;
- All temporary work areas and sand stockpiles must be made safe at all times and must be appropriately managed via the erection of temporary fencing / bunting and signage to ensure that public access is restricted for the duration of the relevant work.
- Whenever possible, sand relocation works will be avoided during peak holiday periods including Christmas, New Year and Easter.

5.5. Sand Removal from Boat Ramp Basin

Council is committed to effective and efficient removal of sand from the boat ramp basin to maintain an appropriate service standard for the facility, while minimising the impacts on the community and the environment.

Prior to 2017, sand removal has been undertaken using excavators. Alternative techniques may include the use of pumping and dredging.

- Preference will be given to methods that deliver the most efficient and cost effective results based on the volume and location of sand at the time of the relocation event.
- Operating hours will be determined by contractor availability and the most efficient use of resources. This may include 24 hour operation over a shorter period, or works over the weekend rather than set working days and hours that cause a significant increase in cost and/or loss in efficiency.
- Whenever possible, sand relocation works will be avoided during peak holiday periods including Christmas, New Year and Easter.

6. Emergency Works

There may be situations in which emergency sand management works are required on weekends or outside of business hours, such as storm events that remove significant sand from the town beaches or erosion threatening infrastructure. In such cases it may be impractical to comply with the operational requirements of this Plan. In those situations, the Council may undertake works to the extent necessary. Where it does so, Council will endeavour to obtain approval from staff of the Coastal Management Branch prior to undertaking the work. Where it is not possible or practicable to obtain prior approval, the Council must advise the Coastal Management Branch as soon as practicable after completion of the work. Council will keep a record of the emergency works undertaken.

7. Monitoring

Recent innovations in drone technology enable efficient and cost effective monitoring solutions. Aerial imagery enables Council to look at the bigger picture, rather than individual beaches. Aerial photos will be combined with on-ground inspections and photographs to monitor beach levels and areas at risk of erosion.

Monitoring will focus on Beaches 4, 5, 7, 8 and 9, as well as the boat ramp basin. The purpose of monitoring is different in each case. Council staff are responsible for the monitoring and initiating management action. This may include engaging professional services, where required, to assist in monitoring, analysis of results and follow up actions.

Table 2: Overview of monitoring

Location	Purpose	Method
Beach 4	Quantity of sand available to restore / protect beaches at risk or showing signs of erosion	Visual inspection of monitoring pole Aerial photography Survey (as required)
Beach 5	Northern end: Quantity of sand available to restore / protect beaches at risk or showing signs of erosion Southern end: Signs of erosion particularly behind boardwalk	Visual inspection Aerial photography Survey(as required)
Beach 7	Signs of erosion Monitoring of sand deposits	Visual inspection Aerial photography
Beach 8	Signs of erosion Monitoring of sand deposits	Visual inspection Aerial photography
Beach 9	Signs of erosion Monitoring of sand deposits	Visual inspection Aerial photography
Boat ramp basin	Depth of water available for boat launching and retrieval Quantity and location of sand available to restore / protect beaches at risk or showing signs of erosion	Visual inspection Aerial photography Depth survey (as required)

8. Records

The sand relocation plans for each event will be the primary record (see details in Section 5.1). These records will assist in planning of future works and provide a reference to past events, allowing ongoing comparison of works. Records will be maintained by Council in accordance with the provisions in the *State Records Act 1997* and made reasonably available to the public for inspection at no cost. If copies are requested, the Council may impose reasonable copying charges. The Council may decline to provide copies where to do so would be unreasonably onerous or burdensome.

9. Review and Amendment of Sand Management Plan

Any amendments to this plan must be agreed to in writing by the Department of Environment Water and Natural Resources. Records of amendments must be recorded in the *Document History and Status* table and will form part of the Records and therefore subject to Section 8 above.

Before making any material change to this Plan, Council must follow the steps in its Community Engagement Policy. Without necessarily limiting those steps, Council must at least give notice of the proposed change to the persons identified in Section 5.2 of this Plan. The Council must have regard to any submission received during the public consultation process before deciding whether or not to vary this Plan.