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Moreton Bay Regional Council
Shoreline Erosion Management Plan for
Bongaree, Bellara, Banksia Beach and
Sandstone Point

MAY 2011

Contents

1.	Introduction	1
1.1	Background	1
1.2	Planning process for the preparation of the Shoreline Erosion Management Plan	1
1.3	Description of the study area	2
1.4	Report structure	3
2.	Study Area Coastal Assessments	5
2.1	Introduction	5
2.2	Geomorphology	5
2.3	Wind climate	6
2.4	Wave climate	12
2.5	Tidal water levels	16
2.6	Tidal Current	18
2.7	Storm tide	18
2.8	Sea level rise due to climate change	22
2.9	Aerial photography and imagery analysis	25
2.10	Sediment transport	25
2.11	Ecology	31
2.12	Cultural Heritage	33
2.13	Land Tenure	33
3.	South Point to Bongaree Jetty	36
3.1	Site description	36
3.2	Historical shoreline changes	44
3.3	Longshore transport	49
3.4	Expected shoreline trends	51
4.	Bongaree Jetty to Bribie Gardens Estate	52
4.1	Site description	52
4.2	Historical shoreline changes	57
4.3	Longshore transport	61
4.4	Expected shoreline trends	63
4.5	Other considerations	63

5.	Bongaree North to Bellara	65
5.1	Site description	65
5.2	Historical shoreline changes	70
5.3	Longshore transport	74
5.4	Expected shoreline trends	74
5.5	Other considerations	76
6.	Sylvan Beach Boating Infrastructure	77
6.1	Site description	77
6.2	Historical shoreline changes	82
6.3	Longshore transport	86
6.4	Expected shoreline trends	87
7.	Sylvan Beach North	88
7.1	Site description	88
7.2	Historical shoreline changes	91
7.3	Longshore transport	95
7.4	Expected shoreline trends	96
8.	Banksia Beach	98
8.1	Site description	98
8.2	Historical shoreline changes	104
8.3	Longshore transport	109
9.	Sandstone Point to Turner's Camp	111
9.1	Site description	111
9.2	Historical shoreline changes	117
9.3	Longshore transport	121
10.	Coastal Management Considerations	124
10.1	Introduction	124
10.2	Regulatory requirements	124
10.3	Management Options and Actions	130
11.	Summary of Key Coastal Issues	141
12.	Stakeholder Consultation Overview	143
13.	Management Options	144
13.1	General	144

13.2	Sand accumulation (Bongaree Jetty)	<u>144</u>
13.3	Beach and foreshore erosion	<u>150</u>
13.4	Beach Reinstatement	<u>160</u>
13.5	Stabilisation of Stepped Revetment Wall	<u>164</u>
13.6	Sedimentation at Stormwater Outlets and Boat Ramps	<u>168</u>
13.7	Siltation of Bribie Gardens Estate Canal Entrance	<u>170</u>
13.8	Additional Legislative Requirements	<u>174</u>
13.9	Monitoring	<u>175</u>
13.10	Summary	<u>175</u>
14.	References	<u>178</u>

Table Index

Table 1	Tidal Planes Lowest Astronomical Tide (LAT)	<u>17</u>
Table 2	Tidal Planes for Bongaree	<u>17</u>
Table 3	Storm Surge Levels	<u>21</u>
Table 4	Storm Surge Levels (excl Sea Level Rise) - Bongaree	<u>22</u>
Table 5	Water Levels for Future Planning - Bongaree	<u>24</u>
Table 6	Comparison of Erosion Control Measures	<u>137</u>
Table 7	Summary of Management Options	<u>176</u>

Figure Index

Figure 1	Locality Plan	<u>4</u>
Figure 2	Wind Rose – Inner Reciprocal - Marker – Full Year	<u>7</u>
Figure 3	Wind Rose – Inner Reciprocal - Marker - Summer Season	<u>8</u>
Figure 4	Wind Rose – Inner Reciprocal - Marker - Autumn Season	<u>9</u>
Figure 5	Wind Rose – Inner Reciprocal - Marker - Winter Season	<u>10</u>
Figure 6	Wind Rose – Inner Reciprocal - Marker - Spring Season	<u>11</u>
Figure 7	Wave Height and Direction - Northerly Winds at 20m/sec	<u>13</u>
Figure 8	Wave Height and Direction - Easterly Winds at	

	20m/sec	<u>14</u>
Figure 9	Wave Height and Direction - Southerly Winds at 20m/sec	<u>15</u>
Figure 10	Wave Height and Direction - Westerly Winds at 20m/sec	<u>16</u>
Figure 11	Water Level Components of an Extreme Storm Tide (GHD 2003)	<u>20</u>
Figure 12	Water Level Frequency – Scarborough (OHAR3)	<u>21</u>
Figure 13	Sea Level Rise Projections (extract from Antarctic Climate and Ecosystems Cooperative Research Centre Report)	<u>23</u>
Figure 14	Longshore Transport Calculation Locations	<u>28</u>
Figure 15	Longshore Transport Results – South Point to Banksia Beach	<u>29</u>
Figure 16	Longshore Transport Results – Sandstone Point to Turners Camp	<u>30</u>
Figure 17	Significant Coastal Areas	<u>34</u>
Figure 18	Land Tenure	<u>35</u>
Figure 19	South Point to Bongaree Jetty – Locality Plan	<u>38</u>
Figure 20	South Point to Bongaree Jetty – Shorelines	<u>47</u>
Figure 21	South Point to Bongaree Jetty – Vegetation Lines	<u>48</u>
Figure 22	South Point to Bongaree Jetty – Longshore Transport	<u>49</u>
Figure 23	Bongaree Jetty to Bribie Gardens Estate Canal – Locality Plan	<u>53</u>
Figure 24	Bongaree Jetty to Bribie Gardens Estate – Shorelines	<u>59</u>
Figure 25	Bongaree Jetty to Bribie Gardens Estate – Vegetation Lines	<u>60</u>
Figure 26	Bongaree Jetty to Bribie Gardens Estate – Longshore Transport	<u>61</u>
Figure 27	Bellara – Locality Plan	<u>66</u>
Figure 28	Bellara – Shorelines	<u>72</u>
Figure 29	Bellara – Vegetation Lines	<u>73</u>
Figure 30	Bellara – Longshore Transport	<u>75</u>
Figure 32	Sylvan Beach Boating Infrastructure – Shorelines	<u>84</u>
Figure 33	Sylvan Beach Boating Infrastructure – Vegetation Lines	<u>85</u>
Figure 34	Sylvan Beach Boating Infrastructure – Longshore Transport	<u>86</u>
Figure 35	Sylvan Beach North – Locality Plan	<u>89</u>
Figure 36	Sylvan Beach – Shorelines	<u>93</u>

Figure 37	Sylvan Beach – Vegetation Lines	<u>94</u>
Figure 38	Sylvan Beach – Longshore Transport	<u>95</u>
Figure 39	Banksia Beach – Locality Plan	<u>100</u>
Figure 40	Banksia Beach – Shorelines	<u>107</u>
Figure 41	Banksia Beach – Vegetation Lines	<u>108</u>
Figure 42	Banksia Beach – Longshore Transport	<u>109</u>
Figure 43	Sandstone Point to Turner’s Camp – Locality Plan	<u>112</u>
Figure 44	Sandstone Point to Turner’s Camp – Shorelines	<u>119</u>
Figure 45	Sandstone Point to Turner’s Camp – Vegetation Lines	<u>120</u>
Figure 46	Sandstone Point to Turner’s Camp – Longshore Transport	<u>121</u>
Figure 47	Alternative Erosion Control Measures – No Action, Relocate Development and Rock Revetment	<u>134</u>
Figure 48	Alternative Erosion Control Measures - Groynes, Offshore Breakwater and Beach Nourishment	<u>136</u>
Figure 49	Stabilisation of Stepped Concrete Seawall	<u>166</u>

Appendices

- A Hydrodynamic and Wave Analysis
- B Maps of Environmental Features
- C Community Consultation



1. Introduction

1.1 Background

GHD has been commissioned to prepare a Shoreline Erosion Management Plan (SEMP) for Moreton Bay Regional Council (MBRC) for the areas of Bongaree, Bellara, Banksia Beach and Sandstone Point (north of the bridge). The SEMP has been developed in accordance with the State Coastal Management Plan (State Plan) and the SEQ Regional Coastal Management Plan.

The SEMP seeks to provide strategic direction for the sustainable management of shoreline erosion for the study area, covering an area of 7.5 km between the south western corner of Bribie Island, north to Wright's Creek at Banksia Beach, and from the mainland abutment of the Bribie Island Bridge at Sandstone Point north to the park at the end of Turners Camp Road. Consideration has also been given to the coastal processes occurring beyond the project area that may influence the coastal geomorphology of the shoreline.

1.2 Planning process for the preparation of the Shoreline Erosion Management Plan

The SEMP has been prepared over two separate phases. Phase One involved a review of the existing coastal resources, taking into consideration the following items:

- ▶ Review of existing data, update existing datasets, and describe historical shoreline changes based on aerial photography for the area;
- ▶ Definition of separate coastal compartments for the study area;
- ▶ Identification of likely cause and magnitude of shoreline erosion problems based on existing coastal processes and a site inspection of each coast compartment within the study area;
- ▶ Identification of environmental habitat and resource issues at each of the compartments within the study area, based on existing information;
- ▶ Hydrodynamic modelling of the northern part of Moreton Bay and Pumicestone Passage and calculation of potential sand transportation and longshore drift to assist with the assessment of the changes that have occurred along the existing coastline;
- ▶ Review of legislative requirements that may have bearing on the preservation and/or management of coastal resources, including information on existing coastal approvals where available; and
- ▶ Identification of risks to the coastline and existing infrastructure.

As part of this process, a Technical Working Group (TWG) was established to assist with data collection and to provide state government input across a range of agencies and interests into the Plan. The TWG consisted of the following representatives:

- ▶ **Moreton Bay Regional Council**
 - Division 1 Councillor
 - Council Officer - Park Maintenance Section



- Council Officer - Drainage Waterways and Coastal Planning Section
- Manager of Infrastructure Management
- ▶ **Department of Environmental and Resource Management**
 - Senior Land Officer
 - Land Administration Officer (as proxy)
 - Principal Environmental Scientist
 - Principal Coastal Engineer (as proxy)
- ▶ **Department of Employment, Economic Development and Innovation - Fisheries Queensland**
 - Manager Planning and Assessment (South)
 - Senior Fisheries Scientist (as proxy)
- ▶ **Department of Transport and Main Roads (Maritime Safety Queensland)**
 - Principal Engineer

Upon completion of the interim report, the document was issued to MBRC and the TWG for review and comment. A final document was then prepared and made available for community comment.

The second phase of the project involved:

- ▶ Review of community comments received and inclusion in the assessments undertaken to date, with reviews of previous investigations undertaken where required;
- ▶ Identification of possible management options for the restoration and/or protection of the foreshore systems to mitigate risks within the study area;
- ▶ Review of potential management options in the light of legislative requirements;
- ▶ Analysis of options and recommendation of preferred approach to management for each coastal compartment within the study area;
- ▶ Provision of a prioritised program of immediate and longer term works based on an assessment of compartments covered in the study with due regard to physical, environmental, social aspects and estimated cost of the works; and
- ▶ Review by Council and the TWG.

This report comprises the final report covering Phases One and Two of the investigation.

1.3 Description of the study area

The study area for the SEMP covers a total distance of 7.5km along the western coastline of Bribie Island. It stretches from South Point to Wrights Creek at Banksia Beach and it also includes the Bribie Island Bridge to Turners Camp in Ningi. The study area has been divided into two main areas:

- ▶ Western shoreline of Bribie Island (South Point to Banksia Beach); and
- ▶ Bribie Island Bridge to Turners Camp Road).

The Locality Plan included as Figure 1 of this report depicts the overall study area.



The western shoreline of Bribie Island (South Point to Banksia Beach) includes the following sites:

- ▶ South Point to Bongaree Jetty (opposite First Avenue);
- ▶ Bongaree Jetty to Bribie Gardens Estate Canal;
- ▶ Bongaree/ Bellara (from the northern wall of Bribie Gardens Estate Canal to the Bribie Island Hotel north of the Bribie Island Bridge);
- ▶ Sylvan Beach Boating Infrastructure (from the Bribie Island Hotel to Warrigal Street);
- ▶ Bellara north (from Warrigal Street to Solander Canal); and
- ▶ Banksia Beach (from Solander Canal to Wrights Creek).

The mainland shoreline between Bribie Island Bridge to Turners Camp Road includes the following sites:

- ▶ Sandstone Point (Bribie Island Bridge) to Turners Camp Road.

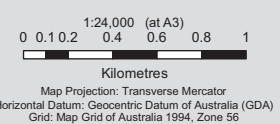
1.4 Report structure

This report has been structured to address the various matters raised in Section 1.2 by initially detailing and assessing the key coastal processes influencing the study area, including aspects relating to geomorphology, wind and wave climate, water levels and tidal currents, sediment transport ecology and cultural heritage. The outcomes of the aerial photography analysis, longshore transport and erosion trends have been considered for each of the specific sites identified in Section 1.3 above. Consideration of the legislative requirements affecting coastal management options has been detailed towards the end of the report, followed by a summary of the key coastal issues likely to require some form of management in the future.

The report then goes on to summarise appropriate high level strategies for addressing the key issues at each of the investigative areas. Specific details relating to the nature of works and possible legislative requirements have been detailed in Section 13 of this report. References have been provided at the end of the document.



- LEGEND**
- Main Roads
 - ↔ Extent of SEMP



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Moreton Bay Regional Council
Shoreline Erosion Management Plan

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Locality Plan

Figure 1