Hunters Hill LGA
9.8 Hunters Hill

9.8.1 General Description

The main sub-catchment area draining to the estuary within the Hunters Hill LGA is the Tarban Creek catchment which covers an area of approximately 226.5 ha. The Tarban Creek catchment is mainly residential with extensive open space along the upstream reaches of the creek, and Riverside Glade Reserve.

Other sub-catchment areas in the study area are located upstream and downstream of the Tarban Creek confluence with the river, while the remainder of the LGA drains into Lane Cove River.

Upstream of the Tarban Creek confluence approximately 60 ha of foreshore land drains to the river, in which land use comprises: residential, Riverside Girls High School, Bedlam Bay Regional Park, Gladesville Reserve and Betts Park.

Downstream of the Tarban Creek confluence approximately 64 ha of foreshore land drains to the river, in which land use is mainly residential with open space and recreational uses located within Fern Road Reserve, Pulpit Point Reserve, Francis Street Reserve, Weil Park, and Clarkes Point.

9.8.2 Stormwater and GPTs

Stormwater management within Hunters Hill LGA is reported in the Northern Sydney Regional Organisation of Councils (NSROC) statement of environment (SoE) reporting. Information relating to the number, type and locations of stormwater devices is not presented in NSROC’s SoEs. Thirty one GPTs were reported in the LGA for 2008-09 (from which 2.5 tonnes of waste were collected) although this number includes GPTs that operate on inflows into both Lane Cove River and Parramatta River.

Table 9-40 summarises stormwater devices operated in the Hunters Hill LGA, although may not be complete.

Table 9-40. Hunters Hill LGA Stormwater Devices

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Waterway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sediment Ponds</td>
<td>Betts Park, Huntley Point</td>
<td>Parramatta River</td>
</tr>
<tr>
<td>Net Tech</td>
<td>George Street, Huntleys Cove</td>
<td>Tarban Creek</td>
</tr>
<tr>
<td>Interceptor</td>
<td>Manning Road, Huntleys Cove</td>
<td>Tarban Creek</td>
</tr>
<tr>
<td>Several Sediment Ponds</td>
<td>Huntleys Cove</td>
<td>Tarban Creek</td>
</tr>
<tr>
<td>Gross Pollutant Trap</td>
<td>Pulpit Point, Woolwich</td>
<td>Paramatta River</td>
</tr>
<tr>
<td>CDS Units, Stormwater Harvesting</td>
<td>Clarke Point Sailing Club,</td>
<td>Parramatta River</td>
</tr>
<tr>
<td></td>
<td>Woolwich</td>
<td></td>
</tr>
</tbody>
</table>

Fifty four stormwater outlets were identified which discharge directly into the estuary from the Hunters Hill LGA. A number of these outlets drain catchments which should be investigated to determine whether gross pollutant control is required or other stormwater management incentive may be warranted (Table 9-41).

Table 9-41. Stormwater Outlets draining potential GPT catchment locations

<table>
<thead>
<tr>
<th>Waterway</th>
<th>Outlet_ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tarban Creek</td>
<td>Tarban_Creek_009</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_009</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_019</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_013</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_014</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_021</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_020</td>
</tr>
<tr>
<td>River_North</td>
<td>River_North_033</td>
</tr>
</tbody>
</table>
9.8.3 Seawalls

The Hunters Hill LGA contains approximately 2.2 km of seawalls of which 19 distinct sections of seawall were assessed (Table 9-42). Assessment details and management recommendations for high priority seawall sections are area provided in Table 9-43.

Table 9-42. Seawalls assessed within the Hunters Hill LGA

<table>
<thead>
<tr>
<th>Asset Name</th>
<th>Locality</th>
<th>Condition</th>
<th>Length (m)</th>
<th>Existing Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUN_S01</td>
<td>Clarkes Pt, Woolwich</td>
<td>Poor</td>
<td>543.9</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S02</td>
<td>Clarkes Pt, Woolwich</td>
<td>Poor</td>
<td>261.1</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S03</td>
<td>Kellys Bush, Woolwich</td>
<td>Good</td>
<td>189.0</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S04</td>
<td>Pulpit Pt, Woolwich</td>
<td>Poor</td>
<td>49.9</td>
<td>Sessile invertebrates, intertidal cavities</td>
</tr>
<tr>
<td>HUN_S05</td>
<td>Pulpit Pt, Woolwich</td>
<td>Poor</td>
<td>54.8</td>
<td>None obvious</td>
</tr>
<tr>
<td>HUN_S06</td>
<td>Pulpit Pt, Woolwich</td>
<td>Good</td>
<td>43.6</td>
<td>Sessile invertebrates, rocky shoreline</td>
</tr>
<tr>
<td>HUN_S07</td>
<td>Ferry St, Hunters Hill</td>
<td>Poor</td>
<td>52.7</td>
<td>Sessile invertebrates, rocky shoreline</td>
</tr>
<tr>
<td>HUN_S08</td>
<td>Tarban Creek</td>
<td>Poor</td>
<td>87.2</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S09</td>
<td>Tarban Creek</td>
<td>Good</td>
<td>16.9</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S10</td>
<td>Riverglade Reserve</td>
<td>Good</td>
<td>197.1</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S11</td>
<td>Riverglade Reserve</td>
<td>Poor</td>
<td>307.2</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S12</td>
<td>Gladesville Bridge</td>
<td>Poor</td>
<td>107.8</td>
<td>Rocky substrate</td>
</tr>
<tr>
<td>HUN_S13</td>
<td>Adjacent to Huntley's Pt.</td>
<td>Good</td>
<td>14.6</td>
<td>Sessile invertebrates</td>
</tr>
<tr>
<td>HUN_S14</td>
<td>William St, Henley</td>
<td>Failed</td>
<td>19.0</td>
<td>Rock platform</td>
</tr>
<tr>
<td>HUN_S15</td>
<td>Dick St, Henley</td>
<td>Poor</td>
<td>58.0</td>
<td>Sessile invertebrates, cavities</td>
</tr>
<tr>
<td>HUN_S16</td>
<td>Kelly St, Henley</td>
<td>Poor</td>
<td>22.9</td>
<td>Sessile invertebrates, sandy beach, large boulders</td>
</tr>
<tr>
<td>HUN_S17</td>
<td>Bedlam Bay</td>
<td>Poor</td>
<td>4.6</td>
<td>Sessile invertebrates, sandy beach</td>
</tr>
<tr>
<td>HUN_S18</td>
<td>Bedlam Bay</td>
<td>Good</td>
<td>123.2</td>
<td>Sessile invertebrates, sandy beach</td>
</tr>
<tr>
<td>HUN_S19</td>
<td>Bedlam Point</td>
<td>Good</td>
<td>20.4</td>
<td>Sessile invertebrates, rocky substrate</td>
</tr>
</tbody>
</table>

Table 9-43. High priority seawalls within the Hunters Hill LGA

<table>
<thead>
<tr>
<th>Asset name</th>
<th>Length (m)</th>
<th>Cost range for traditional engineered seawall replacement</th>
<th>Habitat Creation Option</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>($3,000/lineal m) ($5,000/lineal m)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>($3,000/lineal m) ($5,000/lineal m)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>($3,000/lineal m) ($5,000/lineal m)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>($3,000/lineal m) ($5,000/lineal m)</td>
<td></td>
</tr>
</tbody>
</table>

27 The cost to install a new seawall or coastal revetment is dependent on a number of factors, including:
- The ground conditions at the site
- Materials required, material availability and whether existing materials can be reused
- Site access
- The required structure profile including slope, crest height and foundation depth
- Hydrodynamic conditions

In light of this variability, an indicative cost of $3,000-$5,000 per linear metre of seawall has been adopted for seawalls requiring replacement.

28 Refer section 4.8.1 for explanation of treatments
### Asset name | Length (m) | Cost range for traditional engineered seawall replacement[^1] (\$3,000/lineal m) | Cost range for traditional engineered seawall replacement[^1] (\$5,000/lineal m) | Habitat Creation Option[^2]  
--- | --- | --- | --- | ---  
HUN_S01 | 543.9 | $1,631,755 | $2,719,592 | Seawall surface treatment, sub-tidal cave habitat  
HUN_S02 | 261.1 | $783,275 | $1,305,459 | Seawall surface treatment, sub-tidal cave habitat  
HUN_S04 | 49.9 | $149,798 | $249,663 | Seawall surface treatment, sub-tidal cave habitat  
HUN_S05 | 54.8 | $164,311 | $273,851 | Rock pools, artificial reef habitat  
HUN_S07 | 52.7 | $158,136 | $263,561 | Seawall surface treatment, sub-tidal cave habitat  
HUN_S08 | 87.2 | $261,702 | $436,170 | Seawall surface treatment, sub-tidal cave habitat, artificial reef  
HUN_S11 | 307.2 | $921,593 | $1,535,988 | Potential step style treatment (i.e. Claydon Reserve)  
HUN_S12 | 107.8 | $323,255 | $538,759 | Seawall surface treatment, sub-tidal cave habitat  
HUN_S14 | 19.0 | $50,618.86 | $84,364.76 | Rock pools  
HUN_S15 | 58.0 | $174,087 | $290,144 | Artificial reef habitat  
HUN_S16 | 22.9 | $68,619 | $114,364 | Rock pools, artificial reef habitat  
HUN_S17 | 4.6 | $13,913 | $23,188 | Rock pools, artificial reef habitat  

### 9.8.4 Facilities
Fifteen facilities were assessed within the Hunters Hill LGA (Table 9-44). Assessment details and management recommendations for high priority facilities are area provided in Table 9-45

### Table 9-44. Facilities assessed within the Hunters Hill LGA

<table>
<thead>
<tr>
<th>Asset</th>
<th>Locality</th>
<th>Facility Type</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUN_F01</td>
<td>Clarkes Pt, Woolwich</td>
<td>Public concrete boat ramp</td>
<td>Good</td>
</tr>
<tr>
<td>HUN_F02</td>
<td>Kellys Bush, Woolwich</td>
<td>Timber landing and stairs</td>
<td>Poor</td>
</tr>
<tr>
<td>HUN_F03</td>
<td>Wharf Reserve, Hunters Hill</td>
<td>Informal dinghy storage</td>
<td>Good</td>
</tr>
<tr>
<td>HUN_F04</td>
<td>Ferry St. Hunters Hill</td>
<td>Formal dinghy storage</td>
<td>Excellent</td>
</tr>
<tr>
<td>HUN_F05</td>
<td>Ferry St. Hunters Hill</td>
<td>Informal dinghy storage facility</td>
<td>Good</td>
</tr>
<tr>
<td>HUN_F06</td>
<td>Ferry St. Hunters Hill</td>
<td>Formal &amp; informal dinghy storage</td>
<td>Excellent</td>
</tr>
<tr>
<td>HUN_F07</td>
<td>Adjacent Gladesville Bridge</td>
<td>Timber landing &amp; informal dinghy storage</td>
<td>Good</td>
</tr>
<tr>
<td>HUN_F08</td>
<td>De Milhau Rd. adj, Joeys Boat Shed</td>
<td>Informal dinghy storage facility</td>
<td>Good</td>
</tr>
</tbody>
</table>
Table 9-45. High priority facilities within the Hunters Hill LGA

<table>
<thead>
<tr>
<th>Asset Name</th>
<th>Asset Description</th>
</tr>
</thead>
</table>
| HUN_F14    | **Description:** Timber landing and ramp with informal dinghy storage beneath trees on rocky shoreline.  
**Condition - Failed:** Timber ramp has partly collapsed and is severely deteriorated. Landing has also deteriorated. No formal dinghy storage structure was observed. Vessels must be launched using failed timber ramp.  
**Recommendations:** It is recommended that dinghies are either relocated and ad-hoc structures removed or formal dinghy storage and launching facilities are installed. |
| HUN_F02    | **Description:** Timber landing and stairs with steel connections supported by timber piles which appear to be embedded into rock. Stairs are 1.5m above rocky outcrops and water. Dinghies are tethered to structure and trees on foreshore.  
**Condition - Poor:** Deterioration of timber landing, stairs and piles was observed. Steel connections are corroding. Access to water is difficult as fouling of the lower sea stairs has occurred making them slippery. Bedrock is also exposed at low tide below the structure. No major assets are affected by this facility.  
**Recommendations:** The timber components that form the sea stairs have corroded and are slippery. The structure should be repaired or public access prevented. |

9.8.5 Estuarine Vegetation

Estuarine vegetation within the Hunters Hill LGA consists of small areas of saltmarsh, mangroves, Swamp-oak Forest and Coastal Sandstone Gully Forest and Ridgetop Woodland (Table 9-46). Estuarine vegetation is largely contained within Gladesville Reserve, Betts Park, Riverglade Reserve, and Kelly Bush Reserve.

Seagrasses previously mapped within the waterways adjacent the Hunters Hill LGA were not evident from either of boat and land based field investigations, or only seaweed was found (i.e. 316 m² not evident, and 62.6 m² containing seaweed).

There are limited habitat areas within the Hunters Hill LGA for seagrass to subsist, with most of the foreshore exposed to the Parramatta River (and subject to wind and wave energy). Within Tarban Creek, much of the potential habitat is located amongst privately owned foreshore frontages and associated jetties, moorings and subsequent watercraft traffic.
Table 9-46. Estuarine vegetation within the Hunters Hill LGA

<table>
<thead>
<tr>
<th>Community</th>
<th>Landward Migration (ha)</th>
<th>Total (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Limited</td>
<td>Potential</td>
</tr>
<tr>
<td>Mangrove</td>
<td>0.30</td>
<td>0.90</td>
</tr>
<tr>
<td>Saltmarsh</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Swamp-oak Floodplain Forest</td>
<td>0.07</td>
<td>0.63</td>
</tr>
<tr>
<td>Coastal Sandstone Gully Forest</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Coastal Sandstone Ridgetop Woodland</td>
<td>1.10</td>
<td>0.30</td>
</tr>
</tbody>
</table>

The majority of mangroves in the LGA are located in Tarban Creek, which have some potential for landward migration. Mangroves within the upper tidal reach of the creek are suffering from dense vine growth which is smothering leaves, limiting photosynthesis, and causing die back in some trees.

Saltmarsh in the LGA is located along the foreshore of Gladesville Reserve, and is impacted by dinghy storage, introduced grass and weed species, and emerging young mangroves.

Hunters Hill Council has undertaken a number of bushland rehabilitation and water quality control projects within the Tarban Creek catchment, and has recently commissioned the preparation of a number of Estuary Vegetation Rehabilitation and Management Plans which include Betts Park and Gladesville Reserve.

9.8.6 Management Recommendations

**Stormwater:**
- Review of Tarban Creek catchment and additional areas of gross pollutant trapping considered, e.g. leaf litter entering creek from drainage under Jolie Parade Reserve, quality of flows from unmapped stormwater outlets in seawall HUN_S11, and a (mapped) inflow downstream of Joeys Boat Shed (Photo 9.4(a));
- Minor repairs to southern bank of Tarban Creek (upstream of pedestrian bridge) (Photo 9.4(b)) and small inflows which appear to be a potential source of sediments through erosion (Photo 9.4(c));
- A number of inflows to Tarban Creek from the southern side of Riverglade Reserve are not evident on GIS layers provided by Council, which should be updated;
- Nettech located on (unmapped) drainage inflow to constructed wetlands burgeoning with gross pollutants, erosion evident around surrounding rip rap with landscaping mulch and soils entering wetland (Photo 9.4(d));
- Flows within wetland appear to potentially be short circuiting through patchily distributed wetland plants (i.e. forming preferential flow paths through non-vegetated areas of wetland. The weir (under pathway) has a gradual slope which directs the majority of flow through a smaller section of the weir which is also encouraging preferential flows. Minor remediation works (i.e. weeding, supplementary planting, stabilisation of batters around Nettech and reassessment and potential modification of weir design, would serve to improve water quality treatment in wetland, and in turn, improve water quality discharging to Tarban Creek;
- Manage inflows and organic material entering Tarban Creek from swale in the south western area of open space in Riverglade Reserve (Photo 9.4(e));
- Repairs to pedestrian stairs in Gladesville Reserve which are eroding and a source of sediments to Parramatta River (Photo 9.4(f)).

**Seawalls and facilities:**
- As per recommendations in preceding Sections: 9.7.2 – 9.7.3.
Estuarine vegetation:
- Targeted vine control within the upper tidal reach of Tarban Creek;
- Removal of young Phoenix palms, Coral trees and Green Cestrum within the upper tidal reach of Tarban Creek;
- Provision of formalised dinghy storage in Gladesville Reserve (Photo 9.4(g));
- Control of emerging mangrove saplings in saltmarsh located within Gladesville Reserve (Photo 9.4(h));
- Ongoing monitoring and management of Alligator Weed in Betts Park;
- Gradual removal of large Camphor Laurels in Betts Park and replacement with native species; and
- Small amounts of saltmarsh occurring within the LGA with limited potential for landward migration may provide propagative material for future saltmarsh restoration or rehabilitation projects.
Seawall condition
- Excellent
- Good
- Poor
- Failed

Natural foreshore erosion

Vegetation
- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine-ironbark forest (EEC)
- Coastal sandstone communities
- Seagrass
- Foreshore reserve

Source:
Swaggrass ground truthing: AECOM (2008)
Vegetation base mapping: SMCMA (2007)
Other: refer study section 8.0 (2010)

Coordinate System:
GDA94 MGA 56
PARRAMATTA RIVER ESTUARY PROCESSES STUDY
HUNTERS HILL LGA MAP C
AUG 2010
60097281
9.7c

Seawall condition
- Excellent
- Good
- Poor
- Failed
- Natural foreshore erosion

Facilities
- Stormwater outlets
- Potential GPT site
- Existing GPT
- Stormwater drainage
- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine-ironbark forest (EEC)
- Coastal sandstone communities
- Seagrass
- Seagrass not evident
- Foreshore reserve

Source:
- Seagrass ground truthed: AECOM (2009)
- Vegetation base mapping: SMCMIA (2007)
- Other: refer study section 8.0 (2010)

Coordinate System:
GDA94 MGA Zone 56

Vegetation base mapping: SMCMA (2007)

Other: refer study section 8.0 (2010)
Fig. SITE LOCATION

Seawall condition
- Excellent
- Good
- Poor
- Failed
- Natural foreshore erosion

Facilities
- Stormwater outlets
- Potential GPT site
- Existing GPT
- Stormwater drainage

Vegetation
- Estuarine mangrove
- Estuarine tidal flat
- Estuarine saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine-ironbark forest (EEC)
- Coastal sandstone communities
- Seagrass
- Seagrass not evident
- Foreshore reserve

Source:
Seagrass ground truthed: AECOM (2009)
Vegetation base mapping: SMCMC (2007)
Other: refer study section 8.0 (2010)

Coordinate System:
GDA94 MGA Zone 56
Seawall condition
- Excellent
- Good
- Poor
- Failed

Natural foreshore erosion

Facilities
- Stormwater outlets
- Stormwater drainage

Coastal saltmarsh (EEC)
- Estuarine mangrove
- Swamp-oak floodplain forest (EEC)
- Turpentine-ironbark forest (EEC)
- Coastal sandstone communities
- Seagrass
- Seagrass not evident
- Foreshore reserve

Source:
- Seagrass ground truthed: AECOM (2009)
- Vegetation base mapping: SMCMA (2007)
- Other: refer study section 8.0 (2010)

Coordinate System:
- GDA94 MGA Zone 56

PARRAMATTA RIVER ESTUARY PROCESSES STUDY
HUNTERS HILL LGA MAP E
AUG 2010
60097281
9.7e
SITE LOCATION

Seawall condition
- Excellent
- Good
- Poor
- Failed

Natural foreshore erosion

Potential GPT site

Existing GPT

Facilities
- Stormwater outlets
- Stormwater drainage
- Eucalyptine mangrove
- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine-ironbark forest (EEC)
- Coastal sandstone communities
- Seagrass
- Seagrass not evident
- Foreshore reserve

Source:
- Seagrass ground truthed: AECOM (2009)
- Vegetation base mapping: SMRMRA (2007)
- Other: refer study section 8.0 (2010)

Coordinate System:
GDA94 MGA Zone 56

Fig.
0 70 14035 Meters

PARRAMATTA RIVER ESTUARY PROCESSES STUDY
HUNTERS HILL LGA MAP F
AUG 2010
6097281
9.7f
Appendix 7: Field Assessment Sheets for Priority Sites

SITES IN ORDER OF PRIORITY

All assessment sites are detailed within the project GIS database.

ABBREVIATIONS

Level: metres AHD (m)

Co-ords (MGA): Coordinates Map Grid of Australia

E: easting

N: northing

Condition:

- **Excellent**
  - No defects observed
  - Structure is functioning as intended
  - Minor defects observed

- **Good**
  - Generally good condition
  - Structure is functioning as intended
  - Major defects observed

- **Poor**
  - Structure is at risk of failure without remedial action
  - Reduced functionality
  - Major defects observed

- **Failed**
  - Structure is no longer functioning as intended
  - Structure has collapsed
Seawall Inspection Record - HUN_S01

<table>
<thead>
<tr>
<th>Date</th>
<th>5/08/09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>14:35</td>
</tr>
<tr>
<td>Level</td>
<td>0.80m</td>
</tr>
<tr>
<td>Tide</td>
<td>Low-Mid</td>
</tr>
<tr>
<td>LGA</td>
<td>Hunters Hill</td>
</tr>
</tbody>
</table>

**Co-Ords (MGA)**

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 331042</td>
<td>E 330825</td>
</tr>
<tr>
<td>N 6253968</td>
<td>N 6253769</td>
</tr>
</tbody>
</table>

**Seawall Details (Slope, Material, Const. Method, Type):**

Vertical large grouted sandstone block seawall. The crest was approx. 1.5m above the water level at time of inspection. An old abandoned boat ramp is located at the southern section of the structure.

**Condition Assessment (Slope, Crest, Toe, Backfill):**

Numerous block failures of the crest were observed with blocks fallen into water below. Surface weathering of the sandstone blocks and sinkholes behind structure crest were also observed.

**Assets:**

General public access is available with no barrier to differentiate the wall edge. Access to the water is possible using the old abandoned boat ramp which is mossy and slippery.

**Comments:**

Abandoned boat ramp is located at (WP 225 330950, 6253785). Photos HUN_S01-01 to HUN_S01-22

**Photo 1**
Typical section of seawall showing failure of blocks at crest, surface weathering and loss of grout material.

**Photo 2**
Slumping of sandstone blocks.
Seawall Inspection Record - HUN_S02

**Date**: 5/08/09  
**Time**: 14:15  
**Locality**: Clarke's Point, River North  
**Level**: 0.80m  
**People**: Low-Mid  
**LGA**: Hunters Hill

---

### Co-Ords (MGA)

<table>
<thead>
<tr>
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<td>E 330609</td>
</tr>
<tr>
<td>N 6253769</td>
<td>N 6253786</td>
</tr>
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</table>

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### Seawall Details (Slope, Material, Const. Method, Type):

Vertical large grouted sandstone block seawall. The crest was approx. 1.5m above the water level at time of inspection. A punt operates from the eastern extent of the wall to Cockatoo Island.

---

### Condition Assessment (Slope, Crest, Toe, Backfill):

Numerous block failures of the crest were observed with blocks fallen into water below. Surface weathering of the sandstone blocks and sinkholes behind structure crest were also observed. Western section is in better condition.

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### Assets

General public access is available with no barrier to differentiate the wall edge. Access to the water is possible using ramp associated with the punt.

---

### Comments:

Photos HUN_S02-01 to HUN_S02-06

---

**Photo 1**

Typical section of seawall showing failure of blocks at crest, surface weathering and loss of grout material.

---

**Photo 2**

Western section of the seawall leading to boat ramp is in better condition than the rest of the structure.
## Seawall Inspection Record - HUN_S04

<table>
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<td>12:54</td>
</tr>
<tr>
<td>Locality</td>
<td>Pulpit Point, River North</td>
</tr>
<tr>
<td>Level</td>
<td>0.49m</td>
</tr>
<tr>
<td>Tide</td>
<td>Low</td>
</tr>
<tr>
<td>LGA</td>
<td>Hunters Hill</td>
</tr>
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### Co-Ords (MGA)

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<tbody>
<tr>
<td>E</td>
<td>329944</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>6253552</td>
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</table>

### Seawall Details (Slope, Material, Const. Method, Type):

Medium size grouted sandstone block seawall with one layer of newer blocks along crest associated with development of the foreshore. The crest was approx. 2m above the water level at time of inspection.

### Condition Assessment (Slope, Crest, Toe, Backfill):

Grout is missing from the lower blocks with extensive slumping and cavities observed. A number of localised block failures at the seawall toe were also observed. The newer, top layer is in good condition with grouting present.

### Assets

General public access is available via adjacent park although there is no formalised footpath or barrier differentiating the wall edge. No significant assets are located on or near the structure.

### Comments:

The structure continues beneath the private marina located at Fern Bay. Photos HUN_S04-01 to HUN_S04-05

### Photo 1

Typical view of seawall.

### Photo 2

Block failure at toe and loss of grout and clumping of lower, older sandstone blocks.
Seawall Inspection Record - HUN_S05

Date: 5/08/09  Time: 12:50  Location: Pulpit Point, River North  Level: 0.49m  People: Low  LGA: Hunters Hill

Co-Ords (MGA):
Start
E 329944  N 6253552
End
E 329896  N 6253537

Seawall Details (Slope, Material, Const. Method, Type):
Relatively new stepped wire mesh gabion basket vertical stepped seawall, five baskets wide at toe to one wide at crest. Gabions are filled with what appears to be sandstone, 150-200mm in diameter. A concrete footpath and timber fence is located directly behind the gabion crest.

Condition Assessment (Slope, Crest, Toe, Backfill):
A number of gabion units that make up the toe have failed and have lost fill material. The vertical face component of the structure is in good condition. If the toe continues to deteriorate, the structural integrity of the entire gabion wall may be threatened.

Assets
Safety fence prevents public access to gabion wall. No other major assets are supported by this structure.

Comments:
Photos HUN_S05-01 to HUN_S05-06.

Photo 1
General view of gabion wall.

Photo 2
Loss of material from gabion baskets at toe.
Seawall Inspection Record - HUN_S07

Date: 5/08/09
Time: 12:21
Locality: Hunters Hill, River North
Level: 0.69m
People: Low-Mid
LGA: Hunters Hill

Co-Ords (MGA):
Start
E 329248
N 6254188
End
E 329204
N 6254200

Seawall Details (Slope, Material, Const. Method, Type):
At the western extent the structure is a vertical medium sized grouted sandstone block seawall. The crest was approx. 2.5m above the WL at time of insp. The eastern extent is vertical concrete wall which may be capping an older sandstone block seawall as per the western extent. A set of medium sandstone block sea stairs is located mid-way along the structure and are associated with an historic ferry facility.

Condition Assessment (Slope, Crest, Toe, Backfill):
Sandstone blocks are missing grout and are showing severe signs of surface weathering and slumping. Localised block failures were also observed. Surface weathering and cracking of the concrete section of the structure was observed. The sea stairs have lost grout material and are severely weathered.

Assets:
A steel safety fence is present along the entire length of the structure. Sea stairs appear to be launch site for adjacent dinghy storage facilities (HUN_F04 and HUN_F05).

Comments:
Two dingy storage facilities are located beyond the crest of this structure (HUN_F04 and HUN_F05) and this inspection report should be read in conjunction with the inspection reports for these facilities. The old ferry wharf shelter structure is also located beyond the crest, however, this was not inspected as part of this project. Photos HUN_S07-01 to HUN_S07-07

Photo 1
Sandstone block section of seawall and sandstone sea stairs showing loss of grout, weathering and block failures.

Photo 2
Concrete section of structure showing surface weathering and cracking.
Seawall Inspection Record - HUN_S08

Date: 5/08/09
Time: 11:45
Locality: Tarban Creek Bridge, Tarban Creek
Level: 0.69m
Tide: Low-Mid
LGA: Hunters Hill

Co-Ords (MGA):
Start
E 328431
N 6254376
End
E 328353
N 6254388

Seawall Details (Slope, Material, Const. Method, Type):
Vertical medium size block grouted sandstone seawall. A section to the east of the bridge buttress has been replaced.

Condition Assessment (Slope, Crest, Toe, Backfill):
Excellent
Good
Poor
Failed X

Assets
Although the area is public space the area is heavily vegetated and access to the wall from the road is difficult.
No major assets are supported by the structure.

Comments:
Photos HUN_S08-01 to HUN_S08-05.

Photo 1
Sandstone block seawall on western side of Tarban Creek Bridge.
Cracking and loss of grout was observed.

Photo 2
Sandstone block seawall on eastern side of Tarban Creek Bridge showing newer section and older deteriorated section.
Seawall Inspection Record - HUN_S11

Date: 5/08/09
Time: 10:41

Level: 0.88m
Tide: Mid

Locality: Huntleys Cove, Tarban Creek

LGA: Hunters Hill

Co-Ords (MGA)
Start
E 327811
N 6254395
End
E 328075
N 6254308

Seawall Details (Slope, Material, Const. Method, Type):
Vertical medium to small sized grouted sandstone block seawall. The crest was approx. 1.5m above the water level at time of inspection. Gabion baskets have been trenched into the muddy seabed at the toe. A public concrete footpath runs along the length of the wall.

Condition Assessment (Slope, Crest, Toe, Backfill):
Majority of grout material has been lost from the structure leading to loss of fines from behind and slumping of both the vertical face of the wall and the concrete footpath beyond. Significant weathering of the sandstone blocks was also observed.

Assets
Public footpath is cracked and slumping. No other assets are supported by the structure.

Comments:
The footpath beyond the wall crest is cracking and many defects were marked with crosses at location (WP 206 327942, 6254391). Photos HUN_S11-01 to HUN_S11-10.

Photo 1
Typical view of structure showing loss of grout and slumping of sandstone blocks.

Photo 2
Slumping and cracking of public footpath with marked defects shown.
# Seawall Inspection Record - HUN_S12

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<tr>
<td>Locality</td>
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<tr>
<td>Level</td>
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<td>LGA</td>
<td>Hunters Hill</td>
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</table>

### Seawall Details (Slope, Material, Const. Method, Type):
- **Eastern side of bridge** is medium size specially placed sandstone revetment with small section of gabion baskets. The
- **western size of bridge** is an ad-hoc, poorly sorted, sandstone boulder revetment with a natural sandy shoreline in front.

### Condition Assessment (Slope, Crest, Toe, Backfill):
- The sandstone block revetment and gabion baskets on the eastern side of the bridge are in a **good** condition. The sandstone boulder revetment on western side has failed with material from original structure strewn on the sandy beach in front.

### Assets
- Public access is available via landscaped parkland beyond structure crest. No assets are supported by this structure.

### Comments:
- Photos HUN_S12-01 to HUN_S12-08.

### Photo 1
- Eastern extent of structure showing specially placed sandstone revetment and gabion baskets.

### Photo 2
- Ad-hoc poorly sorted sandstone boulder revetment. Structure has collapsed with material strewn across sandy shoreline.
Seawall Inspection Record - HUN_S14

<table>
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<td>Tide</td>
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</table>

### Seawall Details (Slope, Material, Const. Method, Type):
Small section of vertical medium sized sandstone block seawall founded on bedrock

### Condition Assessment (Slope, Crest, Toe, Backfill):
Wall has partially collapsed and appears to be abandoned.

### Assets
Access to foreshore is accessible from William Street. No assets are in the vicinity of the structure.

### Comments:
Photo HUN_S14-01 and HUN_S14-02.

### Co-Ords (MGA)

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<tr>
<td>6253521</td>
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### Photos

**Photo 1**
View of seawall.

**Photo 2**
Loss of grout, weathering and failure of sandstone blocks.
Seawall Inspection Record - HUN_S15

Date: 5/08/09  
Time: 16:00  
Locality: Henley, River North  
Level: 1.10m  
Tide: Mid  
LGA: Hunters Hill

Seawall Details (Slope, Material, Const. Method, Type):
Appears to be old abutment which consists of revetments on sides and a vertical seawall at the front. The entire structure is made from medium sized sandstone blocks with the front face having some grouting present. A 200mm layer of concrete capping has been placed around the crest as has a strip of asphalt at the front face. The crest was approx. 1.5m above the water level at time of inspection.

Co-Ords (MGA):
Start  
E 327359  
N 6253499  
End  
E 327353  
N 6253506

Condition Assessment (Slope, Crest, Toe, Backfill):
Excellent  
Good  
Poor  
Failed X

Assets
There is no safety rail or structure to differentiate the wall edge. Large sinkholes are being used to hold fishing rods. No other assets are supported by the structure.

Comments:
Photos HUN_S15-01 and HUN_S15-04.

Photo 1
Eastern view of structure. Block failures on front vertical face is shown.

Photo 2
Western section of structure showing extent of slumping of revetment component.
Seawall Inspection Record - HUN_S16

Date: 6/08/09  Time: 11:54  Location: Bedlam Bay, River North

Level: 0.89m  Tide: Mid  LGA: Hunters Hill

Co-Ords (MGA):
Start
E 327284
N 6253809
End
E 327280
N 6253828

Seawall Details (Slope, Material, Const. Method, Type):
Vertical medium size grouted sandstone block seawall founded on bedrock. Sea stairs have been carved into the bedrock. Public baths that were once here have been abandoned. Timber piles remain but do not support any structure or asset. A steel safety fence runs along the majority of the structure.

Condition Assessment (Slope, Crest, Toe, Backfill):
Sandstone seawall has failed in some locations with blocks strewn across bedrock. At other location all grout is missing with surface weathering and large cavities evident while grout has been replaced at discrete locations long the wall. Steel safety fence is corroding. Timber piles are showing signs of deterioration.

Assets
Public access to water is available via carved sea stairs which are mossy and weathered. No major assets are supported by the structure.

Comments:
Dinghies are being stored atop the wall and are discussed in Inspection Record HUN_F15. Photos HUN_S16-01 to HUN_S16-04.

Photo 1
View of structure.

Photo 2
Block failure of seawall.
Seawall Inspection Record - HUN_S17

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**Locality**
Bedlam Bay, River North

**LGA**
Hunters Hill

**Co-Ords (MGA)**

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<td>E 327256</td>
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<tr>
<td>N 6253926</td>
<td>N 6253930</td>
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**Seawall Details (Slope, Material, Const. Method, Type):**
Vertical medium sized sandstone block seawall.

**Condition Assessment (Slope, Crest, Toe, Backfill):**
Numerous blocks have collapsed and fallen into water below. No grouting was observed. Surface weathering and slumping also evident.

**Assets**
Structure is located within a public park however access to wall is difficult as the land beyond the wall is heavily vegetated. No other assets are supported by the structure.

**Comments:**
Photos HUN_S17-01 and HUN_S17-02.

**Photo 1**
View of structure.

**Photo 2**
Block failure of seawall.
### Facility Inspection Record - HUN_F14

<table>
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<tbody>
<tr>
<td>Time</td>
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<tr>
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<tr>
<td>Level</td>
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<td>Tide</td>
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#### Co-Ords (MGA)

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<td>E</td>
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#### Facility Details (Usage, Material, Const. Method, Type):

Timber landing and ramp with informal dinghy storage beneath trees on rocky shoreline.

#### Condition Assessment:

Timber ramp has partly collapsed and is severely deteriorated. Landing has also deteriorated. No formal dinghy storage structure was observed.

#### Assets:

Vessels must be launched using failed timber ramp.

#### Comments:

Photo HUN_F14-01 to HUN_F14-03.

### Photos

**Photo 1**

View of dinghy storage area showing deterioration of timber ramp.

**Photo 2**

Dinghies on timber landing tethered to trees.
## Facility Inspection Record - HUN_F02

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### Co-Ords (MGA)

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### Facility Details (Usage, Material, Const. Method, Type):

Timber landing and stairs with steel connections supported by timber piles which appear to be embedded into rock. Stairs are 1.5m above rocky outcrops and water. Dinghies are tethered to structure and trees on foreshore.

### Condition Assessment:

Deterioration of timber landing, stairs and piles was observed. Steel connections are corroding.

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<th>Excellent</th>
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<th>Poor</th>
<th>Failed</th>
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</thead>
<tbody>
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### Assets:

Access to water is difficult as fouling of the lower sea stairs has occurred making them slippery. Bedrock is also exposed at low tide below the structure. No major assets are affected by this facility.

### Comments:

Structure abuts seawall (HUN_S03). Photos HUN_F02-01 to HUN_F02-03

### Photos

**Photo 1**

View of structure and adjacent seawall (HUN_S03).

**Photo 2**

View of structure showing deterioration of timber piles.