The northern end, Garrison Point (by Sheerness Docks), a wide shingle beach is present; travelling east of this the beach becomes very narrow in front of the concrete block revetment. The beach further east is characterised by pocket beaches and narrow strips of shingle. Neptune Jetty lies in the centre of the unit as is a shore perpendicular concrete structure, which as a retaining structure with a large beach immediately east. Timber groynes along this section are in poor condition. Barton’s Point is a shingle bank that extends between Sheerness town and the clay slopes at Minster. The Minster slopes are heavily defended with a concrete seawall, timber groynes and a shingle beach all in good condition.

Survey outcome:

Trigger levels (critical, maintenance and alarm) have been extracted from the Garrison Point to Minster Cliffs Regional Beach Management Plan 2017, prepared by Canterbury City Council on behalf of the Environment Agency.

Beach levels at Garrison Point, east of Neptune Jetty and Minster are all fairly stable. Low beach levels are present in front of Tesco’s and the Sailing Club but they have been fairly consistent since 2003.

In January 2018, recycling works took place which involved extracting material from Garrison Point to a stockpile at Neptune Jetty which was redistributed to Sheerness Sailing Club (Appendix C).

### Profile Change Summary

<table>
<thead>
<tr>
<th>Survey type</th>
<th>Survey dates</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn to Spring</td>
<td>20/10/2017 - 17/02/2018</td>
<td>The majority of the unit shows predominantly low level changes. Some of the largest overall changes occur in front of Marine Town. There is a large gain on profile 4a00189 of 42m² (42%) and on Profile 4a00205 of 77m² (61%). This is due to recycling works which took place in January 2018 whereby 2,616m³ of material was deposited. Conversely both extraction zones showed losses; Profile 4a00191 has a loss of -20m² (-12%) and Profile 4a00146 lost -43m² (-10%).</td>
</tr>
<tr>
<td>Spring to Spring</td>
<td>14/02/2017 - 17/02/2018</td>
<td>Generally there are low level changes throughout the majority of the unit. In front of Marine Town, there are accretive changes on Profile 4a00178 of 5m² (7%), on Profile 4a00189 of 41m² (40%) and on Profile 4a00205 of</td>
</tr>
</tbody>
</table>
### Interim Report  
#### Grain and Sheppey 2018

<table>
<thead>
<tr>
<th>Survey type</th>
<th>Survey dates</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most recent survey: Autumn 2018</strong></td>
<td></td>
<td>81m² (66%). There are also losses on Profile 4a00186 of -8m² (-7%) and on Profile 4a00191 of -18m² (-11%). At Garrison Point, there is an erosive loss of -45m² (10%). This is due to recycling works which took place in January 2018 (further explained in “Summer to Spring” and in Appendix C).</td>
</tr>
<tr>
<td>Baseline to Spring</td>
<td>30/10/2003 17/02/2018</td>
<td>Historically, the western profiles are accretive at Sheerness. The largest gain can be seen towards Garrison Point on Profile 4a00153 of 57m² (48%). Profiles in the centre are mostly erosive, with the largest losses recorded on Profile 4a00191 of -39m² (-21%) and on Profile 4a00198 of -59m² (-26%). A large gain can be seen on Profile 4a00205 of 61m² (43%). Profiles towards the east fronting Barton’s Point and Minster cliffs have shown overall low level gains, indicating stability; the largest change is on Profile 4a00256 of 18m² (15%). There is also a small loss on Profile 4a00293 of -6m² (-7%).</td>
</tr>
<tr>
<td>Topographic Difference Model and Profile Change Summary</td>
<td>26/04/2017 17/02/2018</td>
<td>The difference model shows the polygons to the west of the unit are accretive with SN02 showing the largest gain of 11,713m³. This reflects the dominant drift rate of east to west. Towards the centre of the unit, SN07 has the largest loss of -12,787m³. Heading east, the remainder of the polygons generally show low level changes with the exception to SN11 and SN12, which combined have gained 14,811m³. Overall, there is a net volume change of 16,913m³. The CSA chart shows the majority of profiles are within or above design range. Profile 4a00272 is within maintenance range and Profile 4a00289 is the only profile within critical range.</td>
</tr>
<tr>
<td>Summer to Spring</td>
<td></td>
<td>Profiles in the eastern end of the unit show predominately low level changes. Between Barton’s Point and Marine Town there is a general accretive trend with the exception of Profile 4a00191 which has a loss of -17m² (-10%). Two of the largest changes occur on Profiles 4a00189 and 4a00205 which have accreted 44m² (44%) and 79m² (64%), respectively, which is a reflection of the beach recycling in January. Heading towards Garrison Point there are mostly small scale changes. The furthest profile north, 4a00146 has eroded -40m³ (-9%), due to recycling. The difference model shows generally small scale changes in the east of the unit with both erosive and accretive polygons. The polygons to the west of Barton’s Point are erosive with SN09 and SN10 showing losses of -747m³ and -904m³ respectively. One of the largest overall</td>
</tr>
<tr>
<td>Survey type</td>
<td>Survey dates</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Most recent survey: Autumn 2018</td>
<td></td>
<td>changes in the unit occurs in SN07, which has a gain of 6,128m³. Further west the largest erosive change is recorded in SN02 of -9,142m³.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>These large changes are due to recycling works in January 2018 (Appendix C), whereby 15,000m³ of material was extracted from Garrison Point and deposited in a stockpile west of the Neptune Jetty. 1,150m³ was moved from the stockpile and combined with an extraction of 1,450m³ east of Neptune Jetty and deposited at the Sailing Club.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is a total net volume change of -2,791m³.</td>
</tr>
<tr>
<td>Spring to Autumn</td>
<td>26/04/2018 25/10/2018</td>
<td>There are generally low level changes throughout. Some of the largest changes occur to the east of Neptune Jetty; the profile directly east, 4a00191 has a gain of 12m³ (8%). This is the beach recovering from the extraction works earlier in the year. Further along Profile 4a00207 also has a small gain of 4m³ (10%). However, the largest change is recorded on Profile 4a00205 of -26m³ (-13%) which indicates the beach material deposited in January has been transported west.</td>
</tr>
</tbody>
</table>
4aSU04 - Sheerness

Current and Historic Beach Cross-Sectional Areas (m²) based on datums of -2 to -0.5 mOD

Design Standard = 1:200 years

Note:
- Sections A, J and L do not contain any RCMP Profiles.
- The SoP in sections A, K, L, Q and R are provided by the defence structure alone.
- There is a flood storage area and set back bund behind the defence in Section D.
Interim Report   Grain and Sheppey 2018

4aSU04 - Sheerness

Note:
- Sections A, J and L do not contain any RCMP Profiles.
- The SoP in sections A, K, L, Q and R are provided by the defence structure alone.
- There is a flood storage area and set back bund behind the defence in Section D.

Current and Historic Beach Cross-Sectional Areas (m²) based on datums of -2 to -0.5 mOD  Design Standard = 1:200 years
Annual Change in Cross-Sectional Area (m2)

**ACCRETION**
- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

**EROSION**
- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

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**South East Regional Coastal Monitoring Programme**

**Profile Change Summary for Autumn 2017 to Spring 2018**

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### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Station</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a00243_t</td>
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<tr>
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</tr>
<tr>
<td>4a00236_t</td>
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<tr>
<td>4a00240_t</td>
<td>0%</td>
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<tr>
<td>4a00263_t</td>
<td>1%</td>
</tr>
<tr>
<td>4a00247_t</td>
<td>0%</td>
</tr>
<tr>
<td>4a00256_t</td>
<td>0%</td>
</tr>
<tr>
<td>4a00251_t</td>
<td>1%</td>
</tr>
<tr>
<td>4a00276_t</td>
<td>-2%</td>
</tr>
<tr>
<td>4a00282_t</td>
<td>-1%</td>
</tr>
</tbody>
</table>

- **ACCRETION**
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)

- **erosion**
  - 15-30%
  - >30%

**Meters**

0 125 250

**Scale** 1:50,000
South East Regional Coastal Monitoring Programme
Profile Change Summary for Spring 2017 to Spring 2018

Annual Change in Cross-Sectional Area (m²)

ACCRETION

- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

EROSION

- 15-30%
- >30%

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### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Station</th>
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<tr>
<td>4a00240</td>
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<tr>
<td>4a00276</td>
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</tr>
<tr>
<td>4a00263</td>
<td>3%</td>
</tr>
<tr>
<td>4a00247</td>
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</table>

#### Classification:

- **ACCRETION**:
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)

- **EROSION**:
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)
South East Regional Coastal Monitoring Programme
Profile Change Summary for Spring 2017 to Spring 2018

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Annual Change in Cross-Sectional Area (m²)

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<tr>
<th>Area</th>
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<tr>
<td>4aSU04-3</td>
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<tr>
<td>4aSU04-2</td>
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</tr>
<tr>
<td>4aSU04-1</td>
<td>&lt;5% (no change)</td>
</tr>
</tbody>
</table>

Meters

0 125 250
Annual Change in Cross-Sectional Area (m²)

ACCRETION
- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

EROSION
- 15-30%
- 5-15%
- >30%

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## Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Location</th>
<th>Change</th>
<th>Notes</th>
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</thead>
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<td>(4)</td>
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<td>4a000236_t</td>
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<td>4a000243_t</td>
<td>9%</td>
<td>(29)</td>
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<td>(0)</td>
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<tr>
<td>4a000263_t</td>
<td>3%</td>
<td>(3)</td>
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<td>4a000230_t</td>
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<td>(13)</td>
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<tr>
<td>4a000276_t</td>
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<td>(3)</td>
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<tr>
<td>4a000282_t</td>
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<td>(2)</td>
</tr>
<tr>
<td>4a000256_t</td>
<td>15%</td>
<td>(18)</td>
</tr>
<tr>
<td>4a000251_t</td>
<td>13%</td>
<td>(18)</td>
</tr>
</tbody>
</table>

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South East Regional Coastal Monitoring Programme
Profile Change Summary for Summer 2003 to Spring 2018

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South East Regional Coastal Monitoring Programme
Difference Model 2018 - 2003

Change in Elevation (m)

Area boundary

Volume change (m3)

-1.5 to -0.25
0.25 to 0.5
0.5 to 1.0
1.0 to 1.5
> 1.5

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South East Regional Coastal Monitoring Programme
Difference Model 2018 - 2003

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Change in Elevation (m)

- < -1.5
- -1.0 to -1.5
- -0.5 to -1.0
- -0.25 to -0.5
- 0.25 to 0.5
- 0.5 to 1.0
- 1.0 to 1.5
- > 1.5

Volume change (m$^3$)
area boundary
South East Regional Coastal Monitoring Programme
Profile Change Summary for Summer 2017 to Spring 2018

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South East Regional Coastal Monitoring Programme
Profile Change Summary for Summer 2017 to Spring 2018

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Annual Change in Cross-Sectional Area (m²)

ACCRETION

- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

EROSION

- 15-30%
- >30%
- Less than 5% (no change)
<table>
<thead>
<tr>
<th>Station</th>
<th>Annual Change in Cross-Sectional Area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>©Aerial photography is copyright to the New Forest District Council. Additional overlaid information is copyright of Canterbury City Council 2018</td>
<td></td>
</tr>
<tr>
<td>Annual Change in Cross-Sectional Area (m²)</td>
<td></td>
</tr>
<tr>
<td>• &gt;30%</td>
<td>• 5-15%</td>
</tr>
<tr>
<td>• 15-30%</td>
<td>• 15-30%</td>
</tr>
<tr>
<td>• 5-15%</td>
<td>• &gt;30%</td>
</tr>
<tr>
<td>• Less than 5% (no change)</td>
<td></td>
</tr>
</tbody>
</table>
South East Regional Coastal Monitoring Programme
Difference Model 2018 - 2017

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Change in Elevation (m)

- Volume change (m³)
- area boundary

- < -1.5
- -1.0 to -1.5
- -0.5 to -1.0
- -0.25 to -0.5
- 0.25 to 0.5
- 0.5 to 1.0
- 1.0 to 1.5
- > 1.5
South East Regional Coastal Monitoring Programme
Difference Model 2018 - 2017

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South East Regional Coastal Monitoring Programme
Profile Change Summary for Spring 2018 to Autumn 2018

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### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Code</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>4a00243_t</td>
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<tr>
<td>4a00270_t</td>
<td>1%</td>
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<tr>
<td>4a00240_t</td>
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<tr>
<td>4a00276_t</td>
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</tr>
</tbody>
</table>

#### Legend
- **ACCRETION**
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)
- **EROSION**
  - 15-30%
  - >30%

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South East Regional Coastal Monitoring Programme
Profile Change Summary for Spring 2018 to Autumn 2018

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Interim Report – Appendix A: Explanation of the Trigger Levels

**CRITICAL LEVEL** – This is the minimum beach level required to prevent overtopping exceeding tolerable limits in a 1:200 year storm event and/or a significant risk of structural damage or undermining. A Sub-Critical level is also defined which is the equivalent level for a standard of protection of 1:10 (approximately equal to half the CSA of the 1:200 event).

**MAINTENANCE LEVEL** – This level is higher than the critical level. The difference in beach cross sectional area is defined by the largest observed annual drop in beach level (since monitoring began in 2003), or where greater the largest loss during a storm event.

**DESIGN LEVEL** – This is higher than the maintenance level and takes into consideration the impact of the defence failing (though undermining or significant overtopping), and builds in an appropriate factor of safety. When carrying out works, where possible, the beach size should be constructed to this level.

The historic changes in cross-sectional area for each profile are summarised and plotted against the trigger levels as follows:

**FIGURE A1: PRESENTATION OF STANDARD OF PROTECTION AND TRIGGER LEVELS**

(A) HISTORIC VARIATION OF BEACH LEVELS (CSA)

(B) SUMMARY OF DATA, PINK BAR – CURRENT BEACH LEVEL, BLACK BARS – HISTORIC HIGH AND LOW

For further information on calculation of the trigger levels please see the relevant Regional Shingle Beach Management Plan.
**Appendix B: Profile Change Summary**

Changes along individual profiles for a range of timeframes are summarised in a series of thematic maps on the previous pages. The maps show the location of each beach profile, superimposed on aerial photography (note the lines have been extended for clarity). The name of the profile, the percentage change of beach material and the change in m² has been including upon the line, which is illustrated in Figure B1.
## Maintenance Log: Sheerness (4aSU04)

- **Deposition**
- **Extraction**
- **Reprofiling**

### Date
- January 2018

### Logged by
- Andy Stevens

### Description of Works/Notes

Approx. 15,000 m³ of material extracted from Garrisons Point and deposited in a stockpile west of the Neptune Jetty. 1,150 m³ moved from stockpile on to Sheerness Sailing Club, and 1,450 m³ extracted from east of Neptune jetty and deposited at Sheerness Sailing Club.

### Description of Frontage

**Before**
- Depleted beaches across Sailing Club frontage, large accumulation of shingle at Garrison’s Point and possible shingle loss offshore towards Sheerness docks.

**After**
- Sailing club frontage large berm (see photo above taken from Sailing Club ramp), beach berms at Garrison’s Point and Neptune jetty East reduced. Large stockpile of shingle West of Neptune Jetty.

### Quantify extraction

**Note:** If volume unknown conversion used is 1.8 tonne: 1 m³ of material

<table>
<thead>
<tr>
<th>Profile/Groyne No.</th>
<th>Profile/Groyne No.</th>
<th>Quantity (m³)</th>
<th>Lorry Capacity (m³)</th>
<th>Number of lorry loads</th>
<th>Material Description</th>
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<td>1,464</td>
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</table>

Total: 16,536 m³

### Quantify deposition

**Note:** If volume unknown conversion used is 1.8 tonne: 1 m³ of material

<table>
<thead>
<tr>
<th>Profile/Groyne No.</th>
<th>Profile/Groyne No.</th>
<th>Quantity (m³)</th>
<th>Lorry Capacity (m³)</th>
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<td>4a00207</td>
<td>2,616</td>
<td></td>
<td></td>
<td>Shingle</td>
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</table>

Total: 16,536 m³