Sandymount Coastal Flood Defence Scheme–Phase 1&2

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To South East Area Committee 13th September 2021
Location Map Phase 1 - Promenade
Introduction

The Sandymount Coastal Flood Defence Scheme currently consists of two phases. Phase 1 relates to the back of footpath wall along the existing promenade from Gilford Ave to St. Alban’s Park. Phase 2 relates to the seawall between Gilford Ave and Seafort Ave.

Phase 1 flood defence works will consist of the following:

- The extension (i.e. raising) of existing back of footpath wall (Figure 2.1) by up to approximately 360mm. Similar stone to existing will be used for the raising of the wall.
- Repair and refurbishment of existing back of footpath wall, to current visual standard.
- Provision and installation of flood gates.
- Construction of ~65m of a new stone wall 800mm high around the sea side of the Martello Tower.
- Erection of site compound on promenade.
- Remove existing shrubbery and replace as required by Parks, Biodiversity and Landscape Services.
- Closure of sections of the existing footpath during construction.
- Access to be maintained to the promenade.
- Reconstruction of promenade and footpath (where required) to existing standard.
Sandymount Strand
Raised Wall Plan, Changes & Typical Section
Draft Map for Information & Discuss for Only

As Rotin Constitutional Gamps Kemp
Raman Senthilnathan & Associates
Environment and Transportation Department
Survey and Mapping Division

TYPICAL RAISE WALL SECTION

REPLACE OR NEW CAPSTONE
RAISE EXISTING WALL WITH MASONRY
REMOVE EXISTING CAPSTONE
BREAK OUT EXISTING MASONRY WALL

John V. Flanagan
Public Project Engineer
Active City Engineer

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Flood Projects & Water Framework Directive Division
SANDYMOUNT STRAND

TYPICAL PEDESTRIAN ENTRANCE

DRAFT

Sandymount Strand
Raised Wall Plan, Changes & Typical Section
Draft Map for Information & Discussion Only

As.Robic Comhshad agus Ionad
Rannach Stiabhnastra agus Liricailte
Environment and Transportation Department
Survey and Mapping Division

EXISTING WALL CREST LEVEL ABOVE
+4.20m OD - NO RAISING REQUIRED

<table>
<thead>
<tr>
<th>Wall No Raising Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Floodgate Location</td>
</tr>
</tbody>
</table>
Typical Vehicle Entrance

Typical Pedestrian Entrance

<table>
<thead>
<tr>
<th>Location</th>
<th>Entrance Type</th>
<th>Existing Width (m)</th>
<th>Proposed Width (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap 1</td>
<td>Pedestrian</td>
<td>1.85</td>
<td>1.85</td>
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<tr>
<td>Gap 2</td>
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<tr>
<td>Gap 3</td>
<td>Vehicle</td>
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<td>Gap 4</td>
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<td>7.5</td>
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<tr>
<td>Gap 6</td>
<td>Pedestrian</td>
<td>2.7</td>
<td>Access to be closed</td>
</tr>
<tr>
<td>Gap 7</td>
<td>Vehicle</td>
<td>7.25</td>
<td>7.25</td>
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<td>Gap 8</td>
<td>Vehicle</td>
<td>6.1</td>
<td>6.1</td>
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<td>Gap 9</td>
<td>Vehicle</td>
<td>6.1</td>
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<td>1.4</td>
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<tr>
<td>Gap 11</td>
<td>Pedestrian</td>
<td>1.85</td>
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</tr>
</tbody>
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Flood Defence Level

- The proposed flood defence level is 4.2m Malin Head, that is 4.2m above average sea level.

- This level is from the Dublin Coastal Flood Protection Project and new waves modelling which includes for the breaking up of sea waves by undulations in the long sandy beach and the existing promenade.

- It is roughly made up of 3.25m Malin Head, which is the current estimated 200 year tide still water level, which is the National design recommended defence level for which funding is available.

- 0.25m for the associated wave with 200 year tidal flood event.

- 0.4m for sea level rise due to global warming, 0.13m having occurred already.

- 0.3m free board or safety margin, National recommended level for solid wall.

- 3.25 Malin Head+0.25+0.4+0.3= 4.2m Malin head
Proposed Wall Height Variance

- As the level of the roadway above mean sea level varies along Beach road and Strand road the height of a flood wall varies to maintain a constant flood protection height above mean sea level.

- Overall approximately 1,150 properties will be protected from the estimated 200 year tidal flood event plus associated wave action and around 3,000 properties will have reduced flooding risk from the 1,000 year flood event.

- The allowance in sea level rise for global warming has to be continuously reviewed as this has implications for the associated wave height as well. The deeper the sea water the larger the waves with the same wind driving them.
Sandymount Flood Alleviation Scheme Phase 2

- This proposed section is approximately 800m long from the north of the promenade to the southern end of Sean Moore Park.
- Previous studies indicated four main very preliminary options.
- Option 1 building a new wall up to 1.5m above footpath level with rock armour protection on the sea side.
- Option 2 raising the existing wall to a maximum level of 1.2m above footpath level with an 8m wide promenade with rock armour on the sea side.
- Option 3, same as Option 2 but with a 30m wide promenade.
- Option 4, Build a new higher flood wall on the sea side of the existing sea wall.
Phase 2 – Existing Layout

Promenade to Sean Moore Park

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Option 2 – 8m wide promenade

Rock Armour

Sean Moore Park

Promenade

Height of wall 1.15m
Level 3.10m MHD
Wall 600mm (approx)
Stone Base
Top of Wall 4.25m OD MHD
RC Wall 300mm
New Promenade 8.0m

Footpath
GARDEN
STRAND ROAD

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Option 3 – 30m wide promenade

- Sean Moore Park
- Promenade
- Rock Armour
Option 4 – New wall on sea side

- New RC Wall 300mm
- Top of Existing Wall 3.50m OD MHD
- Level 3.10m MHD
- Height of wall 1.60m
- New Wall 800mm at base
- Top of Proposed Wall 4.70m OD MHD
- Existing Wall 600mm (approx)
- Existing Stone Base
- 2.0m Below Beach Level

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Funding requirements Phase 2

- **Option 1** - Rock armour and wall height increase. Prelim Est. 10m euro. Possible mainly OPW funding. Business case required. Significant environmental constraints. Foreshore licence. DCC Boundary extension required for all options.

- **Option 2** - 8m wide promenade. Prelim est 12.3 million euro. Possible mainly OPW funding. Business case required. Large environmental issues. Foreshore licence.

- **Option 3** - 30m wide promenade. Prelim est 49m euro. Other sources of funding required to OPW. Large environmental mitigations. Foreshore licence.

- **Option 4** - 21 million euro, new flood wall on sea side. Diversion of 110kV ESB cable. Other funding sources required. Large environmental issues. Foreshore licence.
Next Steps -

- Construction of flood defences on existing promenade programmed for Q4 2021 to Q4 2022 depending on COVID restrictions, OPW direct labour and funding.
- Appointment of consultant for Phase 2 and increase in rock armour size for Phase 1, programmed for Q4 2021.
- Evaluate all existing and any other options for Phase 2.
- Non statutory public options consultation Q3 2022.
- Planning target Part 10 to ABP Q3 2024.
- Decision Q3 2025.
- Procure contractor Q1 2026.
- Construction Q2 2026 to Q3 2028.
- Handover Q4 2028. 12 month maintenance period 2029.
Thank You