

01 | Welcome

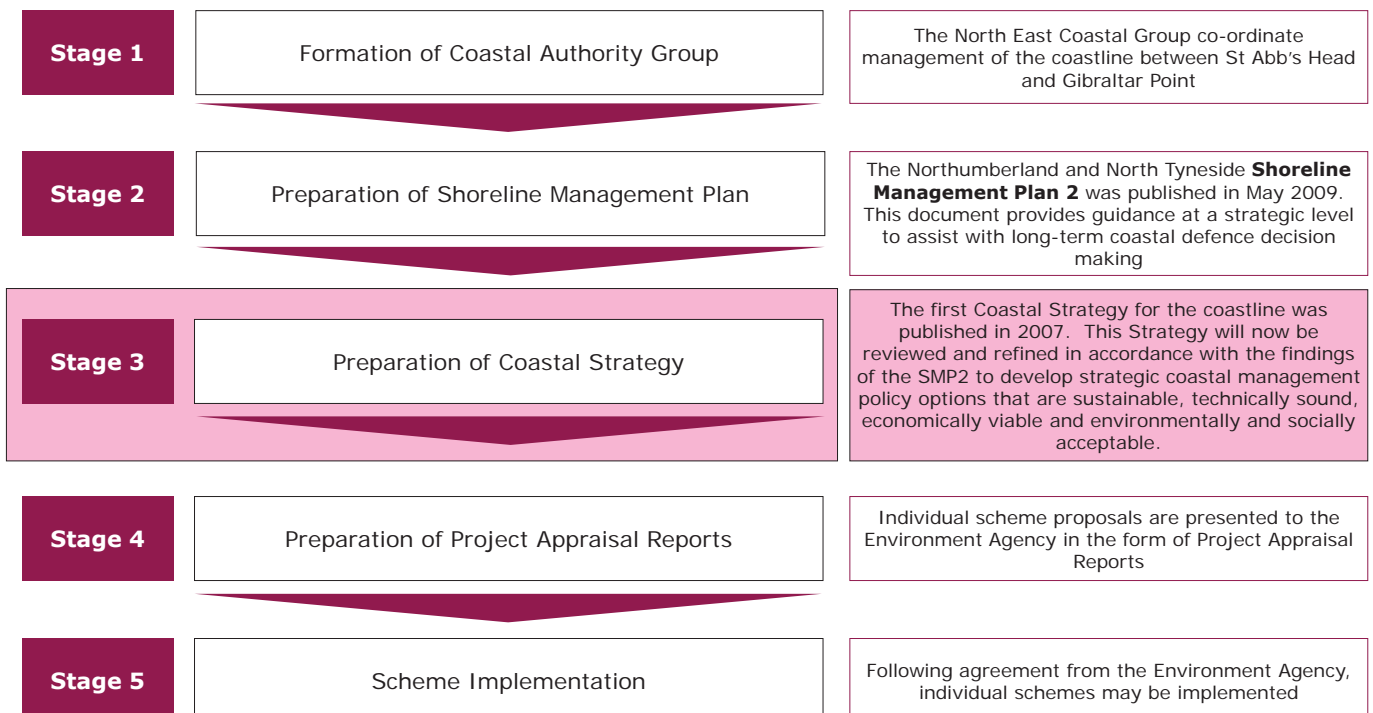
Welcome to the Second Public Consultation Event for the Hartley Cove to River Tyne Coastal Strategy Review

The **Coastal Strategy** is a non-statutory document providing a high level basis for decision making on the long term management of the coastline between Hartley Cove and the River Tyne.

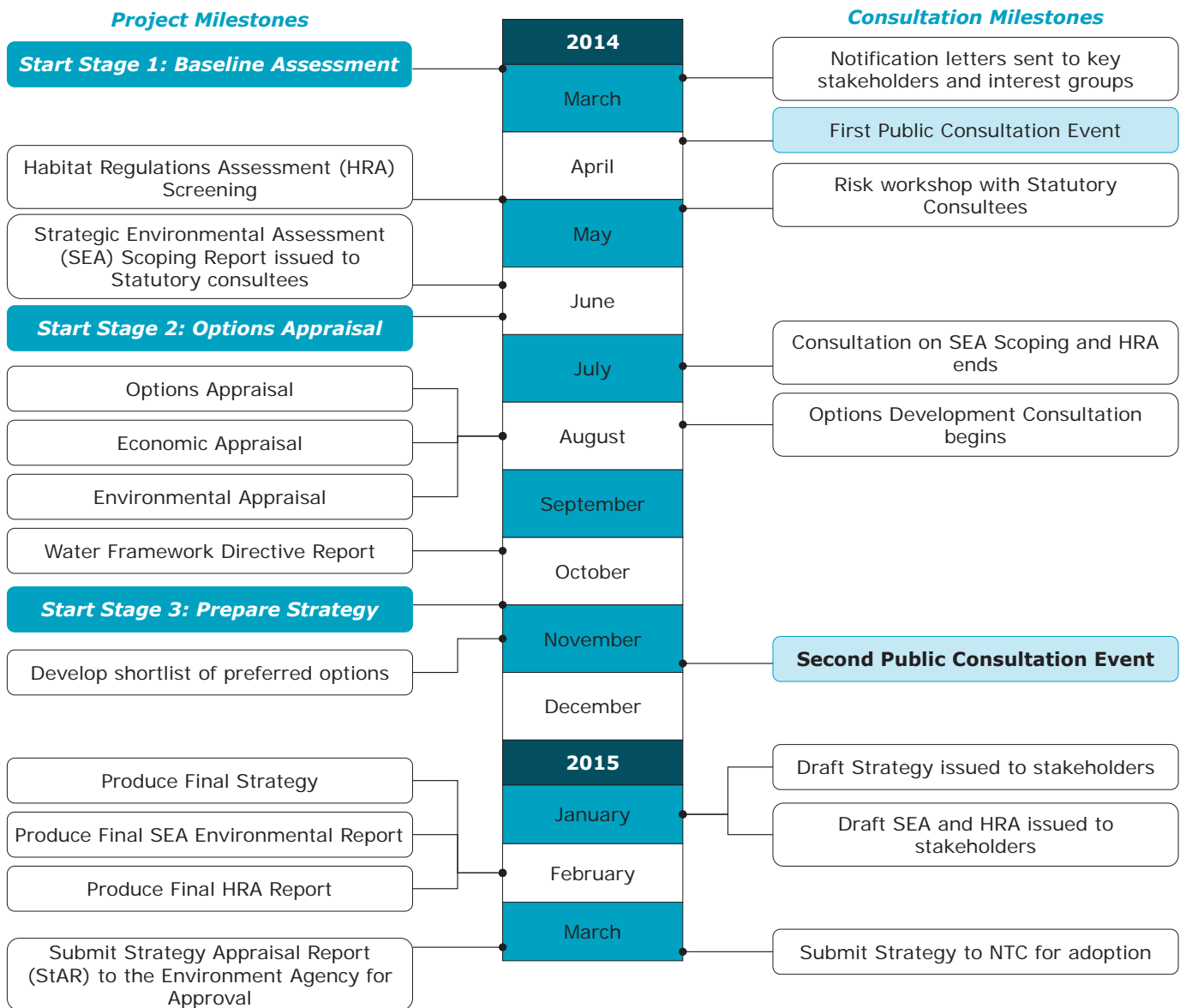
The review appraises a range of coastal defence options to determine the most socially and environmentally acceptable and cost effective method of managing risks such as flooding, erosion and sea level rise.

The first Coastal Strategy for the coastline was published in 2007. Since this initial publication, a revised Shoreline Management Plan (SMP2) has been published and a number of schemes have been completed or identified. The aim now is to develop a revised Coastal Strategy which sets out long term, sustainable solutions for the management of the coastline whilst incorporating a number of changes to legislation since the original Strategy was published.

Coastal Defence Planning Framework



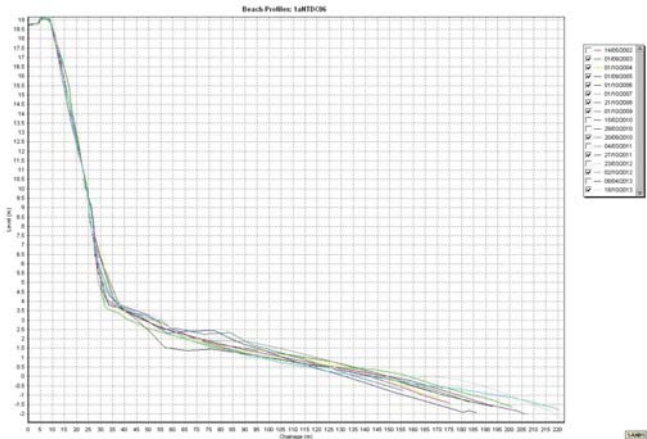
02 | Programme



03 | Coastal Processes

Due to delays in obtaining some datasets the coastal process and erosion rates assessments have not been finalised at this time. However, some initial conclusions are shown below.

Topographic surveys have been undertaken since 2002 to produce beach profiles at a series of locations in Whitley Sands, Cullercoats Bay, Tynemouth Longsands and King Edward’s Bay. These have been plotted and analysed to help gain an understanding of changes in beach levels and volumes. The figure (right) shows a time series plot of a profile from Tynemouth Longsands and shows how the beach levels change cyclically and within a relatively small overall envelope.



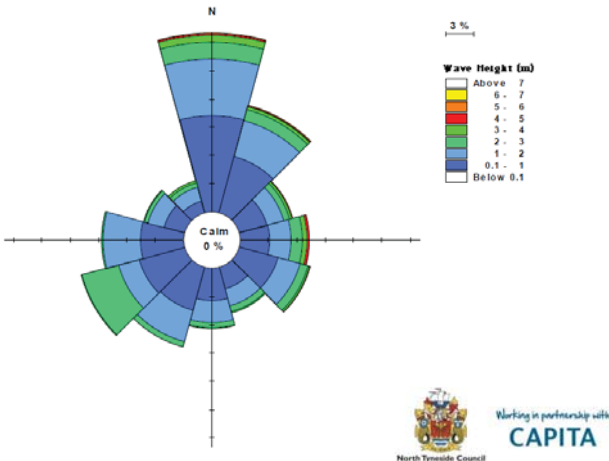
Predicted tide levels at North Shields

Return Periods (years)	Sunderland Coastal Monitoring (Scott Wilson 2003)	EA CFB Study (2011)	NTSLF (2014)
1	-	3.2	3.16
2	-	3.27	3.25
5	3.32	3.38	3.37
10	3.38	3.46	3.46
20	3.44	3.55	-
25	-	3.58	3.55
50	3.51	3.67	-
75	-	3.72	3.67
100	3.57	3.76	-
150	-	3.82	3.76
200	3.62	3.87	-
250	3.64	3.9	3.85
300	-	3.92	3.91
500	-	4	-
1000	3.79	4.11	3.97

Waves and water levels have been assessed to gain an understanding of the conditions that occur along the NTC frontage. The table shows a comparison of extreme predicted water levels at North Shields that have been derived from coastal monitoring data and extracted from other reports. This information can be used along with predictions of expected sea level rise to help understand how coastal processes will change and how the coastline will evolve in future.

Wave Height Rose for Offshore Wave Climate (UKMO, 2007)

The offshore wave climate has been assessed from monitoring data to analyse the height, direction and number of waves that occur offshore and how these will effect flood risk and future erosion of the coastline.



04 | Key Issues and Opportunities

We have developed an understanding of the key issues and opportunities along the coast through consultation with statutory bodies, local authorities, interest groups and the public.

Risk of flooding and/or erosion

Several properties and assets are at risk of flooding and/or erosion. These include:

- the boat house, miniature golf course and car park north of Brierdene Burn;
- the Dove Marine Laboratory, the Lifeboat Station and the 'Brae' in Cullercoats Bay;
- the cafe on Tynemouth Longsands; and
- residential and commercial properties in the Fish Quay Area.

Recreation

The coast provides numerous opportunities for recreation and makes an important contribution to the economy and the health and wellbeing of local communities.

Access to the coast should be maintained and improved where possible and consideration should be given to the development of the new Coastal Path.

The needs of a wide variety of users should be taken into account i.e. walkers, surfers, canoeists, kayakers, sailors, anglers.

Nature Conservation

There are a diverse range of natural environments along the coast, many of which are recognised for their local, national and international importance through statutory and non-statutory designations. These sites need to be protected.

The Northumbria Coast SPA consists of discrete sections of rocky shore which support internationally important numbers of wintering birds. Some of this habitat is at risk of being lost due to the effects of 'coastal squeeze'.

Heritage Conservation

The built heritage of North Tyneside should be protected. Assets include:

- Tynemouth Castle and Priory (a Scheduled Ancient Monument);
- numerous Grade I, II* and II Listed buildings; and
- local cultural assets such as, the Tynemouth Open Air Pool, the Lions Head Fountain, the Dove Marine Laboratory and Tynemouth Sailing Club Hut.

05 | Options Development

Policy Unit 1: Hartley Cove to Curry's Point

This unit consists of undefended cliffs with a rock shore platform. The only structure is a set of steps at Hartley Cove which provide access to the beach and a view of the exposed coal measures (Tynemouth to Seaton Sluice SSSI). Within this unit there are no properties deemed to be at risk of erosion within the Strategy's timeframe however, sections of a Public Rights of Way and National Cycleway may be lost. Erosion rates are low and mainly occur due to slumping of the softer cliff material.

Options shortlisted for PU 1

Possible Options	Description
0. Do Nothing (baseline)	No further works will be carried out on the existing structures, they will be left to deteriorate and fall into the sea. The rest of the PU would be allowed to retreat naturally.
1. Do Minimum	Reactive repair of the existing structures (steps providing access to the beach). The rest of the PU would be allowed to retreat naturally.



Policy Unit 2: Curry's Point to Trinity Road car park (including St Mary's Island)

Assets at risk within this unit include properties on St Mary's Island and the car park located on Trinity Road. Defences exist on the landward end of the causeway to St Mary's Island, around the island and southwards from the causeway to the end of Trinity Road car park.

Options shortlisted for PU 2

Possible Options	Description
0. Do Nothing (baseline)	No further works would be carried out. Existing defence structures would be allowed to deteriorate and fall into the sea.
1. Do Minimum	Reactive repair carried out on the existing structures when they are damaged or breached.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Sustain	The height of the sea wall is raised to counteract the effects of sea level rise.
4. Managed Realignment	Not retained for the shortlist.



06 | Options Development



Policy Unit 3: Trinity Road car park to Briardene Burn

This unit is characterised by undefended soft cliffs which are actively eroding. Continuing erosion would eventually threaten the car park at Briardene Burn as well as the golf course. The only other asset at risk in this unit is the boatyard at the top of the beach which would be vulnerable to flooding and erosion in the future.

Options shortlisted for PU 3

Possible Options	Description
0. Do Nothing (baseline)	Allow the coast to evolve naturally.
1. Improve	Construction of a seawall. <i>Not retained for the shortlist.</i>
2. Managed Realignment	The car park and boat house would be moved back. Defences at the northern and southern end of the unit would be managed as the cliffs are allowed to erode.

Policy Unit 4: Briardene Burn to Table Rocks

This unit is almost entirely defended and provides protection to the urbanised area of Whitley Bay. Defences include a rock revetment on the southern side of Briardene Burn and the Northern and Central Promenades. Other assets protected include recreational open space (Whitley Links), the A193 and the main sewer that serves Whitley Bay.

Options shortlisted for PU 4

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing structures as they are damaged or breached.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Sustain	The height of the existing structures would be increased to counteract the effects of sea level rise.
4. Improve	Additional defence structures will be introduced, potentially new Groynes on Whitley Sands to limit the extent of sediment movement.
5. Managed Realignment	<i>Not retained for the shortlist.</i>



07 | Options Development

Policy Unit 5: Table Rocks to Brown's Point

The northern section of Brown's Bay consists of rock cliffs which are protected by the substantial rock platform of Table Rocks. Brown's Bay has two sections of seawall that are in fair condition and protect the coastal road (Windsor Crescent) and properties inland.



Options shortlisted for PU 5

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing structures as they are damaged or breached.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Managed Realignment	<i>Not retained for the shortlist.</i>



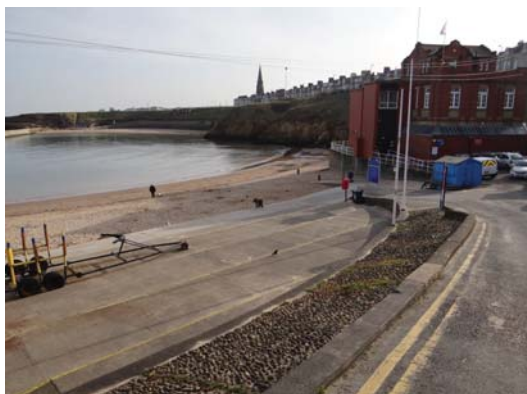
Policy Unit 6: Brown's Point

Brown's Point consists of hard rocky cliffs and is undefended. Occasional rock falls occur but there are no assets at risk on the cliff top.

Options shortlisted for PU 6

Possible Options	Description
0. Do Nothing (baseline)	No works would be undertaken and the coast would be left to evolve naturally.
1. Improve	Rock armour placed at toe. <i>Not retained for the shortlist.</i>

08 | Options Development



Policy Unit 7: Cullercoats Bay

The northern section of this unit is defended by sea walls which extend from Brown's Point to the north pier. There are low concrete walls around the lifeboat station and a stepped concrete apron, known as the Brae, adjacent to the Lifeboat Station and the access ramp. There are concrete walls around the Dove Marine Laboratory and then undefended cliffs leading to further sea walls that continue round the bay to the South Pier. The Dove Marine Laboratory, Lifeboat Station and Brae currently fall within the EA's flood risk zone (>0.5% annual probability).

Options shortlisted for PU 7

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing structures as they are damaged or breached.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Sustain	Raise the level of the Brae and/or the level of the piers.
4. Managed Realignment	<i>Not retained for the shortlist.</i>

Policy Unit 8: Tynemouth North Point

Tynemouth North Point consists of hard cliffs with caves and an arch formation. The unit is entirely undefended.

Options shortlisted for PU 8

Possible Options	Description
0. Do Nothing (baseline)	No works would be undertaken and the coast would be left to evolve naturally.
1. Improve	Rock armour placed at toe. <i>Not retained for the shortlist.</i>



09 | Options Development

Policy Unit 9: Tynemouth Longsands

The north of the unit is defended by a masonry wall which leads onto a Promenade and access ramp to the beach. The central section is undefended sand dunes that are presently managed to improve their condition and prevent further erosion of the dune system. A second vehicular access ramp is located at the southern end of the unit and leads to a beach side cafe and the Tynemouth Canoe Club boat house. A sea wall extends to the southern end of the unit and includes the Tynemouth Pool.



Options shortlisted for PU 9

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing structures as they are damaged or breached.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Sustain	Raise the level of the sea walls and/or create an offshore reef to provide protection to the dunes.
4. Managed Realignment	Demolition of the pool and replacement with a sea wall. Relocation of the cafe and Canoe Club building. <i>Not retained for the shortlist.</i>



Policy Unit 10: Sharpness Point

This unit is made up of hard cliffs that are undefended. The cliffs are highly fractured and experience regular rock falls and slippage. There are access steps to the beach which are heavily abraded.

Options shortlisted for PU 10

Possible Options	Description
0. Do Nothing (baseline)	No further works will be carried out on the existing structures (steps), they will be left to deteriorate and fall into the sea. The rest of the PU would be allowed to retreat naturally.
1. Do Minimum	Reactive repair of the existing structures (steps providing access to the beach). The rest of the PU would be allowed to retreat naturally.
2. Improve	Rock armour placed at toe. <i>Not retained for the shortlist.</i>

10 | Options Development



Policy Unit 11: Tynemouth Shortsands (King Edward's Bay)

King Edward's Bay is protected by a number of sea walls forming a promenade around the bay. Above the defences are slopes and cliffs. The coastal road (Sea Banks) runs along the top of the cliff and would be the main asset at risk.



Options shortlisted for PU 11

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing structures as they are damaged or breached.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Managed Realignment	<i>Not retained for the shortlist.</i>

Policy Unit 12: Tynemouth Headland

Tynemouth Headland consists of rock cliffs that are fractured and suffers from regular rockfalls. Tynemouth Priory and Castle (a Scheduled Ancient Monument) sits above the cliffs and some cliff stabilisation work has been undertaken to manage erosion of the headland.

Options shortlisted for PU 12

Possible Options	Description
0. Do Nothing (baseline)	No further works will be carried out on the existing structures (cliff stabilisation works), they will be left to deteriorate and fall into the sea. The rest of the PU would be allowed to retreat naturally.
1. Do Minimum	Reactive repair carried out on the existing cliff stabilisation structures as they are damaged.
2. Improve	Rock armour placed at toe or more cliff stabilisation buttresses put in place. <i>Not retained for the shortlist.</i>



11 | Options Development

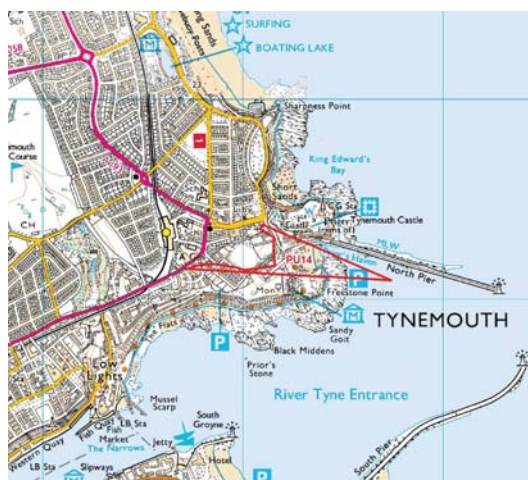
Policy Unit 13: Tynemouth North Pier

Tynemouth North Pier is approximately 1.7km long and provides shelter to the mouth of the Tyne. The structure is in good condition and while it does not protect any assets it does provide protection to areas up river. The unit extends beyond the pier into a small bay known as Prior's Haven and covers a small revetment which runs alongside the access track to the North Pier.



Options shortlisted for PU 13

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing cliff defence structures as they are damaged.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Sustain	Raise crest levels of the Pier to prevent overtopping. <i>Not retained for the shortlist.</i>



Policy Unit 14: Prior's Haven

Prior's Haven contains a small sandy beach and is backed by undefended coastal slopes. Some of the slopes show signs of slippage. Within the bay and located on the beach is the Tynemouth Sailing Club boathouse.

Options shortlisted for PU 14

Possible Options	Description
0. Do Nothing (baseline)	Allow the coast to evolve naturally.
1. Improve	Rock armour placed at toe. <i>Not retained for the shortlist.</i>

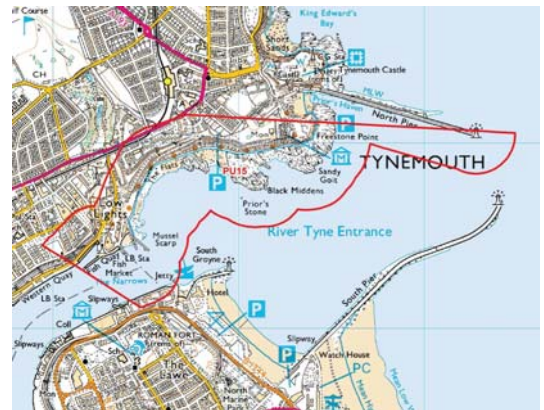
12 | Options Development

Policy Unit 15: Tynemouth(The Flatts)

This unit covers the coastline from the headland south of Prior's Haven into the mouth of the River Tyne and up to the quays at Fish Quay. The defences on the headland are in poor condition. Other structures include sea walls, a rock revetment and the quays. Commercial assets located around Fish Quay are currently at risk of flooding.

Options shortlisted for PU 15

Possible Options	Description
0. Do Nothing (baseline)	No further works would be undertaken and the defences would be left to deteriorate and fail over time, the coast would then evolve naturally.
1. Do Minimum	Reactive repair carried out on the existing cliff defence structures as they are damaged.
2. Maintain	Planned annual inspections of the existing structures with repair works carried out as the need is identified.
3. Sustain	Raise the level of the quay and other defences as sea levels rise.
4. Improve	Raise the level of the quay now to reduce flooding.
5. Managed Realignment	<i>Not retained for the shortlist.</i>



Thank you for attending this public consultation event.

For further information, or if you would like to comment on proposals for the Hartley Cove to the River Tyne Coastal Strategy Review please speak to a member of the project team here today.

Alternatively you can fill in a feedback form and return it by:

Email

ntccoastalstrategy@capita.co.uk

Post

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