



COASTAL SCHEME ACHIEVEMENTS



MESSAGE FROM THE PROJECT DIRECTOR



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The Southsea and North Portsea Coastal Schemes are both once-in-a-generation opportunities to ensure the city stays safe and prosperous despite the ever-growing threat of climate change. These two flood defence schemes represent over £250m of inward investment and are a huge vote of confidence from the Environment Agency and other funding partners in our ability to deliver complex and lengthy construction projects.

In 2023 we achieved some fantastic results. The highlight for the Southsea Coastal Scheme was the opening of its first phase at Long Curtain Moat in February. There was an excellent public response to this new, improved area and it was great to see the new sea defences performing as they should during the severe Storm Ciaran in early November. Work continued at pace around frontage four (Southsea Castle) with a major milestone being the completion of the new promenade here and the full rock sea defence structure placed.

The North Portsea Coastal Scheme continues to be at the forefront of environmental enhancements, with a highlight being the construction of an island near Eastern Road to ensure that overwintering birds can roost undisturbed. A competition to name the island attracted more than 240 entries – with Cockleshell Island named as the winner. The name is a tribute to the Cockleshell Heroes who trained for months around Southsea and Langstone Harbour before setting off in December 1942 to a daring raid, using kayaks (nicknamed cockles) to blow up enemy ships in occupied France.

The achievements below are a reference to our success to date and the talent of all those who have been involved in this work making our city a safe, vibrant, and prosperous place to live and work. In addition, our work provides greater opportunity for future investment as well as acting as an enabler, enhancing the seafront by ensuring it continues as a source of enjoyment for all user groups.

GUY MASON

PROJECT DIRECTOR - SOUTHSEA AND NORTH PORTSEA COASTAL SCHEMES



FRONTAGE 4 - SOUTHSEA CASTLE

BEFORE



AFTER








SOUTHSEA COASTAL SCHEME ACHIEVEMENTS

The Southsea Coastal Scheme is the UK's largest local authority-led coastal defence project, worth more than £180M. It will stretch for 4.5km from Old Portsmouth to Eastney and help to reduce the risk of flooding to more than 10,000 homes and 700 businesses.

The Scheme is comprised of six frontages. Work commenced on Frontage 1 (Long Curtain Moat) in September 2020 and the area opened to great public

acclaim in February 2023. Frontage 4 (Southsea Castle) is the second phase of the Scheme with work getting underway in January 2022 and an anticipated end date of June 2024. Frontage 5 (Pyramids to Speakers' Corner) began in October 2023 and is due for completion in December 2024. The full Scheme is due to be complete by 2029.

The new flood defences in this area will protect:

 More than 10,000 residential properties	 704 commercial properties	 16 residential properties at risk of coastal erosion	 3 scheduled monuments and 74 listed structures	 4 critical access routes at risk from flood water
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Sospan Dau

The completion of frontage one of the Southsea Coastal Scheme was followed by rapid progress on frontage four (Southsea Castle). With the new promenade completed and all the rock sea defence structure in place, it's clear to see we're on target towards a successful opening of frontage four by summer 2024 once all the enhancements such as lighting and seating are complete. In addition, a third phase is also underway between the Pyramids and Speakers' Corner with an estimated completed date of winter 2024. This area is known as frontage five.

CONSTRUCTION HIGHLIGHTS

FRONTAGE ONE - LONG CURTAIN MOAT

Frontage one opened in February 2023. Construction highlights included:

- The old seawall was demolished and a new seawall built
- The height and width of the promenade were increased
- 525 linear metres of sheet piles were installed, totalling 6300m² (if the piles were laid end to end, this would make a total of 12km of sheet piles driven into the ground)
- 11,474 tonnes of rock imported from Norway
- 118 parapet units and 18 special parapet units, totalling 136 units
- 5700 tonnes of in situ concrete
- 18 rock pools
- Two new bridges, lighting, plants and seating were installed
- Clarence Pier carpark was restored.



FRONTAGE FOUR - SOUTHSEA CASTLE

Activity in this section has included:

- 145 000 tonnes of rock imported and placed to make up the new sea defences
- A 96m rock groyne constructed to reduce beach erosion
- Split-level promenade known as the 'Theatre of the Sea' complete
- 45 tide pools installed
- Final aesthetic touches underway, including seating and lighting.

VIEW THE PROGRESS VIDEO →



To make the frontage four area fully accessible and to allow it to reopen by summer 2024, rock work commenced in the area near Blue Reef Aquarium from January until February 2024. Over this period, long reach excavators moved and placed rocks from a large stockpile into place next to Blue Reef Aquarium.



FRONTAGE FIVE - PYRAMIDS TO SPEAKERS' CORNER

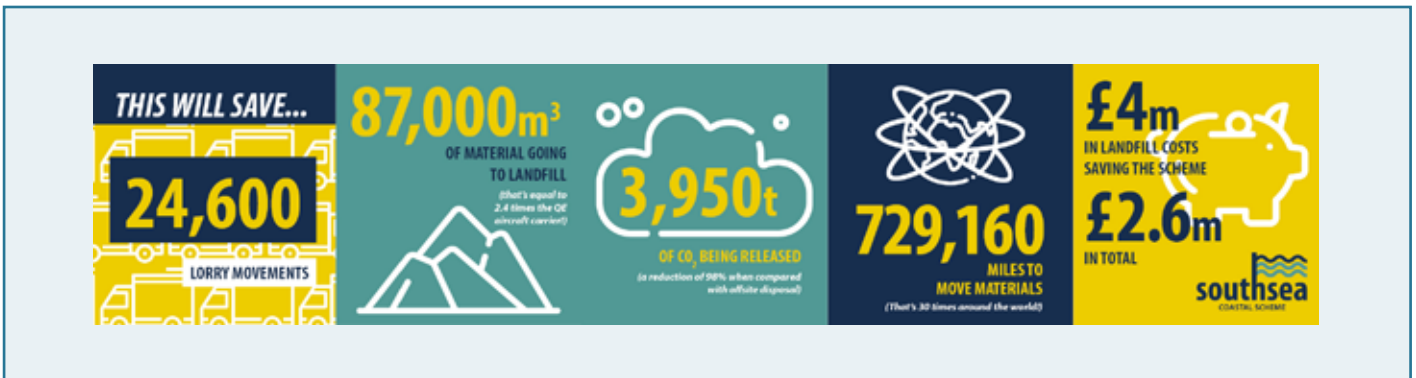
Work began in September 2023. Activity in this section has included:

- The Sospan Dau dredging vessel 'rainbowed' 24,000m³ of shingle to recharge the beach by the newly constructed groyne
- Temporary decking area built for The Briny restaurant to give it space for outdoor dining during construction
- All listed structures have been removed
- The area is expected to re-open in winter 2024.

ENVIRONMENT AND WILDLIFE PROTECTION

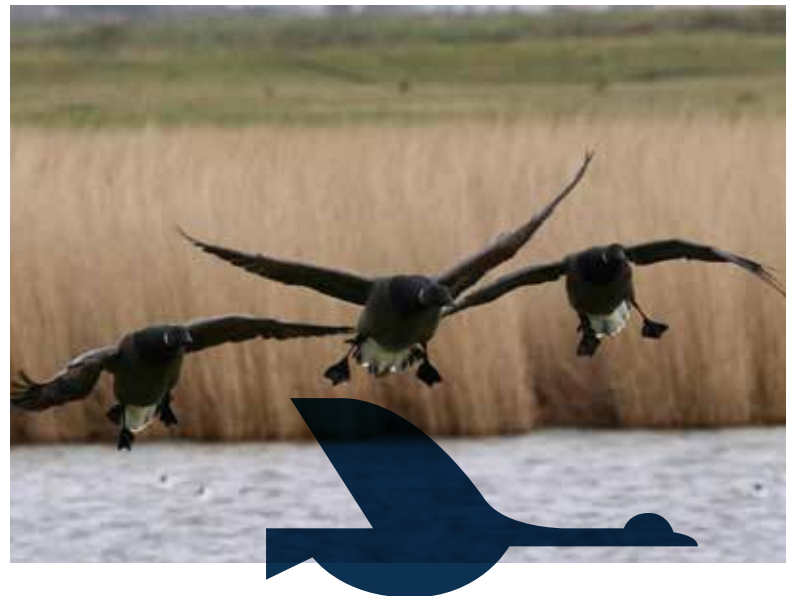
The Scheme aims to be a zero waste project and a materials processing site has been set up on the Ministry of Defence Field on Pier Road to achieve this goal. The Scheme plans to reuse material that will be broken and excavated out of the existing structures to provide fill material for the new sea defences and road raising.

Here are some impressive statistics on savings to be gained from the materials processing site:



Across two frontages, the Scheme has installed 63 tide pools to enhance marine life. These concrete pools are designed to create ecosystems that mimic natural rock pools found on rocky coastlines and are found along the coastline and embedded in the groyne at frontage four.

Respecting the habitats of wildlife is a priority of the Scheme, and the team worked closely with Natural England on mitigation strategies for the Brent Geese and Purple Sandpiper birds that previously roosted in construction area. These include providing alternate roosting spaces, restricting noisy work during roosting season, and planting 'seed rocks' to provide food for the birds.



The Scheme also aims to schedule work around the purple sandpiper birds that overwinter in the area around Southsea Castle, restricting noisier work to months outside the time the birds feed in the area. Seed rocks have been planted to speed up the colonisation of the new rock structure by the castle, providing feeding matter for the birds.

HISTORIC FINDS AND WORKING WITHIN HISTORIC SURROUNDS

Throughout frontage one (Long Curtain Moat), materials were meticulously sourced to ensure they closely replicated the original sea defences, with Purbeck limestone (taken from the original limestone seam of material as the original Long Curtain Moat) and granite units making up the new defences. Approval from Historic England for the materials to be used came after more than a year of consultation and testing to ensure the new design was sympathetic to the historic area. This is a great example of pioneering engineering work undertaken by the team and has been extremely well received by the community.

There were several unexpected discoveries made during the works at historic frontage one, and the Scheme worked closely with Historic England and Wessex Archaeology as finds were unearthed. The team uncovered the remains of the 17th century city walls and defences, as well as original bankers' marks inscribed on the stones.



The first historic find came back in late 2020 when sections of the historic defences of Old Portsmouth, possibly dating back to the 17th century, were unearthed on Southsea's MoD field as it was being set up as a materials processing compound.

This was followed by a section of the original wall being uncovered by Long Curtain Moat which has been restored and will be a focal point when the area opens. The finds in this area have been recorded for posterity and will be included on information boards for the public along the new promenade.

Near Southsea Castle, a swivel mount gun emplacement was exposed beneath the existing promenade in front of the Castle, which has been dated to the early 19th century. In addition, a large triangular defence structure was found to the south of the gun emplacement. This is likely to be part of the redesign of the castle by the Dutch engineer Bernard De Gomme and is physical evidence of the large scale upgrading of the historic defences of Portsmouth that took place in the late 17th century. This significant has been incorporated into the esplanade with an etched metal finish displaying the original structure and interpretation signage to be added.





Other finds include:

- The bowl of a smoker's pipe that looks likely to originate from Fareham Pipe Makers in the 1800s
- A copper bell likely dating back to Victorian times found while digging a trench to connect electricity on Castle Field
- A piece of stamped pottery from the Southsea Baths & Assembly Rooms, dating back to 1871
- Sections of Edwardian promenade.

Most recently, two Victorian bottles were found in near-perfect condition while digging up the old promenade at frontage five (Pyramids to Speakers' Corner), with the larger likely to be an inkwell.





COMMUNICATION AND ENGAGEMENT

The team has continuously worked with the community and has its own on-site project information centre where visitors can drop in. Regular stakeholder and community engagement activities are undertaken and a customer engagement officer is employed by the contractor to look after corporate social responsibility.

Prior to the Scheme starting, one of the largest ever consultations held by Portsmouth City Council was undertaken, gathering the views of members of the community regarding design options.

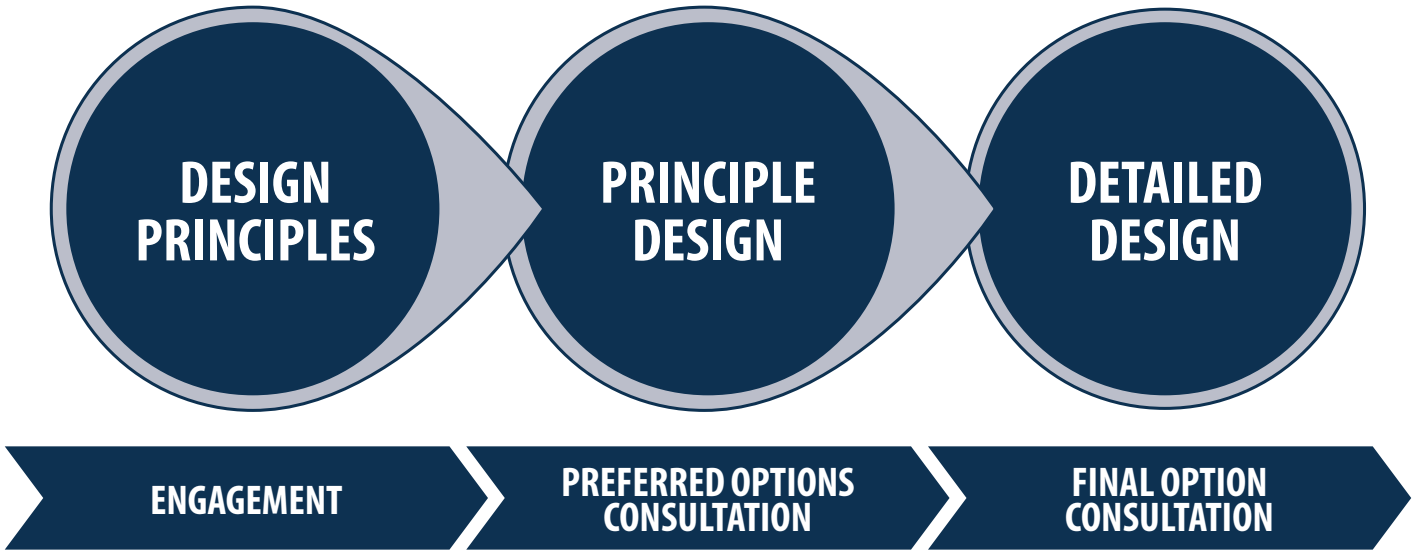


Figure 1: Stakeholder engagement and consultation process

Consultation began with design principles engagement from October to November 2017, followed by preferred options consultation in July and August 2018 then final option (pre-planning) engagement in 2019. Prior to this there was a non-statutory public consultation which ran

for eight weeks from 3 November 2014 to 29 December 2014 which gave the public the chance to view and comment on the short list of coastal defence options being proposed for Southsea. A total of 471 people attended the exhibition events.



Highlights of 2023 included:

- **Official opening with ribbon cutting ceremony with (then) Mayor Hugh Mason in March 2023.**
 - **Summer 2023 Gazebo Road Show - July/Aug 2023 in six prominent locations along seafront over six weeks, speaking to 344 residents over six three-hour periods.**
 - **Biggest exhibition so far at CourtX Tennis Centre in Southsea with 775 visitors over two days.**
 - **Popularity of historical finds - sold out Wessex Archaeology talk on Southsea Coastal Scheme finds, Portsmouth Museum, May 2023.**
 - **Exhibition "Ocean at the end of the Lane" since July 2023 at Portsmouth Museum.**
 - **Great exposure around the arrival of Sospan Dau in September 2023**
 - **Worked cooperatively with the Briny restaurant and Baffled Coffee Kiosk – both in the vicinity of current frontage five work – to promote that they would remain open during the works via diversion signage and on hoardings.**
 - **Site visits from EA, SCG and SCOPAC, Duisburg (Germany) delegation, press, student groups, stakeholders, councillors.**
 - **Engagement visits (with wave tank) to schools, colleges, local groups University of the Third Age (U3A), Sustrans, Portsmouth Society and more.**
 - **Winter Road Show at Southsea Library - 12 December (exhibition from 5 December).**
 - **More and more drone images and footage available - various videos underway.**
- **Key stats at January 2024:**
 - **Weekly update - 5,851 e-bulletin subscribers**
 - **Website: 16k new users since June 2023**
 - **LinkedIn: 1,713 followers, 58, 97 impressions since June 2023**
 - **Facebook: 6,020 followers. Recent most successful post reach: 306,702, engagement: 16,821, 3.5k 🍌 406 ❤️**

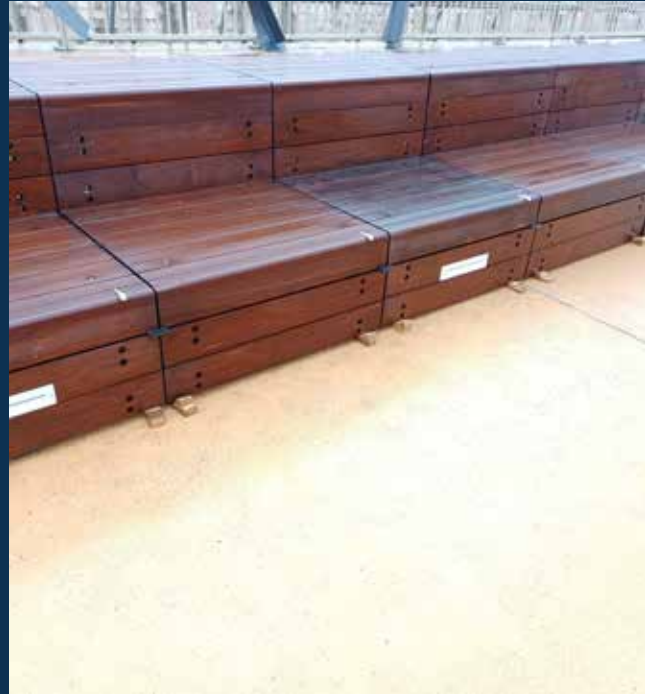


AESTHETIC ENHANCEMENTS (PUBLIC REALM)

The Southsea Coastal Scheme is much more than sea defences. The project provides excellent opportunities to improve the seafront, enhancing the area for the benefit of all, from new lighting and seating to planting beds and the widening of existing walkways.

Public art will be incorporated throughout the Scheme and is being coordinated by the Culture and Leisure Directorate. A Seafront Arts Programme Officer works part-time for the Scheme. One of the projects of this officer is the replacement of the 'long shelter' at frontage five (Pyramids to Speakers' Corner) where plans are underway to design and construct a new 'long shelter' following removal and disposal of the old shelter for construction work.

Across the Scheme, memorial benches are being replaced with new, sustainable seating. This will provide continuity along the seafront and has been well received by the public. Listed structures - including some shelters - that are removed from frontages along the seafront for Southsea Coastal Scheme construction will be restored and placed back along the seafront once the areas reopen.





FUNDING

The Southsea Coastal Scheme has been funded from several sources; primarily the Environment Agency. A successful funding bid was made to the Solent Local Enterprise Partnership for £5M.

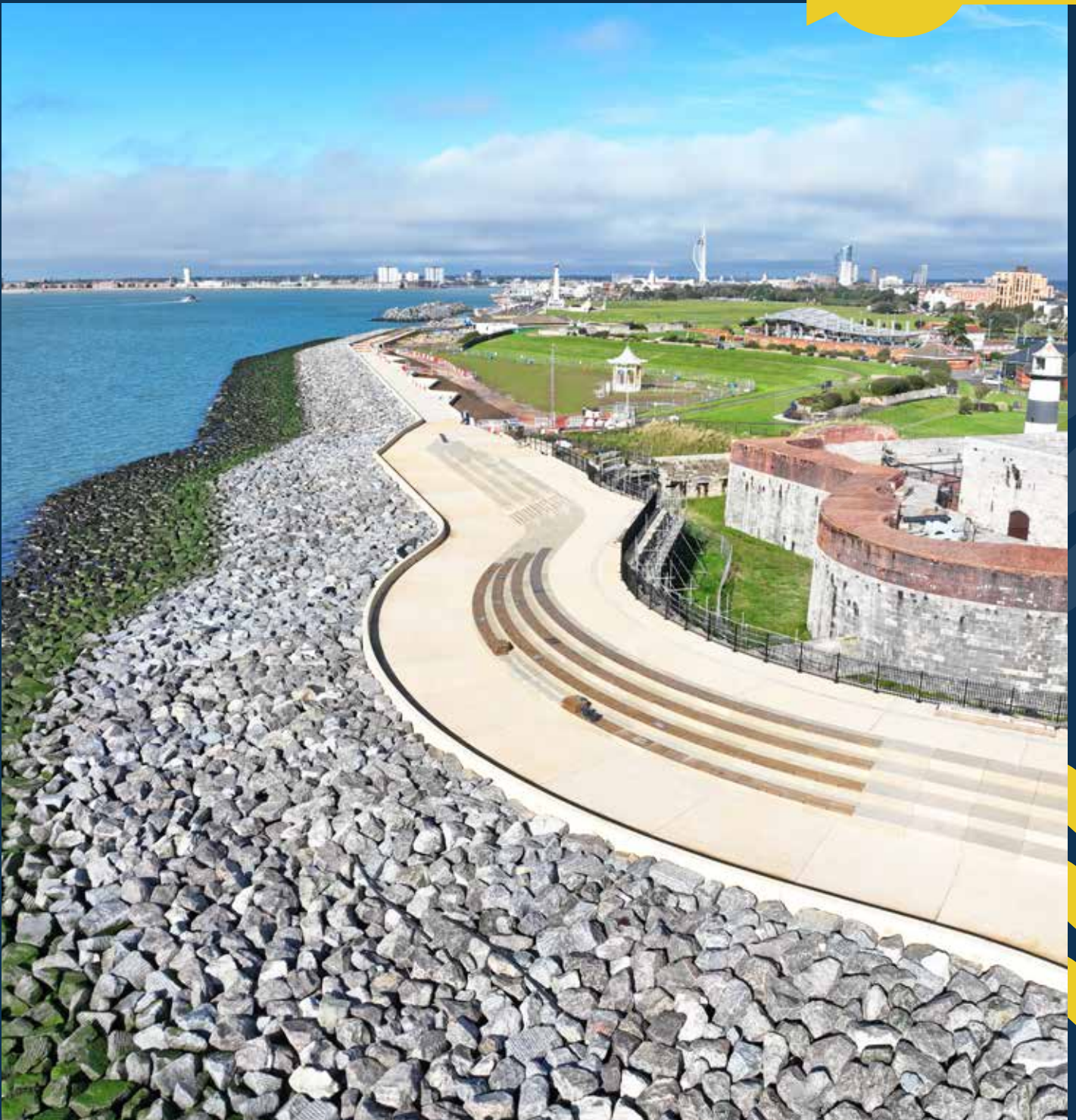
The current financial status is below - Figures correct at December 2023

FUNDING SOURCE	VALUE
Environment Agency - FDGiA	£118,197,881
'Other Government Department' Funding	£27,865,424
Environment Agency – Inflation Uplift	£17,427,730
Portsmouth City Council	£6,536,500
Local Enterprise Partnership (LEP)	£5,000,000
Environmental Enhancement Funding	£463,800
TOTAL	£175,491,335

COMING NEXT...

2024 is going to be another exciting year. As ever, dates are subject to change, but here are some things to look forward to:

- April 2024 – Bandstand Field opens.
- May/June 2024 – Frontage four at Southsea Castle opens.
- October 2024 – Construction of frontage three begins.
- December 2024 – Frontage five at Speakers' Corner opens.



NORTH PORTSEA COASTAL SCHEME ACHIEVEMENTS

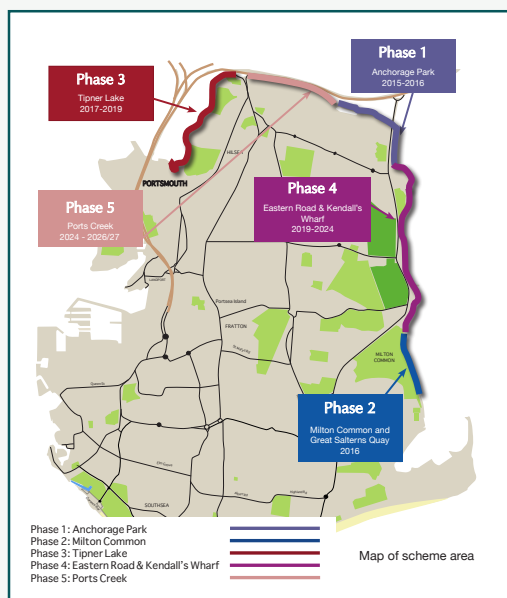


The North Portsea Coastal Scheme covers 8.4km of Portsmouth's coastline from Tipner through to Milton. Most of the area is low-lying and many of the current coastal defences are approaching the end of their effective lives.

With Flood Defence Grant in Aid money secured, new, fit-for-purpose sea defences are being delivered in five phases along Portsmouth's northern shoreline.

Highlights of the Scheme:

- £67.4million approved funds
- delivered in 5 phases from 2015 - 2026
- 1 in 500 year standard of protection
- More than 4,200 homes, 500 businesses, and critical infrastructure protected
- Design life of 100 years
- First UK Scheme to use a large-scale ecoformliner
- Focus on 'greening the grey'



Flooding on Eastern Road - photo credit Marcin Jedrysiak

CONSTRUCTION HIGHLIGHTS

PHASE 1 - ANCHORAGE PARK 2015-2016

The first phase of the project included the construction of 1.4km of earth embankment with rock revetment toe.



Before



PHASE 2 - MILTON COMMON 2016

At Milton Common, 1.5km of set-back earth embankment was constructed and a rock revetment structure added to protect from erosion while keeping the natural feel of the area adjacent to green spaces with lakes.



Before



PHASE 3 - TIPNER LAKE 2017-2019

Construction of 1.9km of a seawall, a new improved shared footpath and cycleway, landscaping, play features and information points, introduction of three tidal pools to help encourage marine biodiversity and 200m² of locally grown saltmarsh along with reinstatement of 150m² of divided sedge.



PHASE 4A - KENDALL'S WHARF 2019 - 2020

The first stage of phase 4 (4a) by Kendall's Wharf, towards the northern end of Eastern Road (connecting with phase 1 at Anchorage Park), was completed in 2020 and opened to the public in 2021 (to allow time for planting to establish).

An embankment made from earth was constructed, featuring a new enhanced public path for pedestrians and cyclists. The entrance road to Kendall's Wharf was raised by 1m to ensure continuous flood protection, meeting the embankment. New trees and wildflowers to encourage bees and other wildlife were planted along this 300m long stretch.

In the area leading towards the coastal path, a new sheet pile wall, entirely clad in timber, was built linking towards the first sections of concrete sea wall.





PHASE 4B- EASTERN ROAD 2021 - 2024

Working south along Eastern Road, phase 4b is being constructed through the summers of 2021 - 2024.

In **2021**, the first section of phase 4b was completed up to the land just north of Harbourside Holiday Park. This part of construction involved building the first sections of the new sea wall, featuring the special ecoformliner texture, two areas of glass flood wall, as well as two new improved slipways for the sailing club and the water sport centre.



In 2022 work included the construction of 540m of full height concrete flood defence wall with using 5,700 tonnes of concrete, installation of the third and final area of 310m of glass flood wall at Harbourside Park. To install the glass, individual glass sections weighing up to 350kg each are slotted in between two upright aluminium posts attached to the concrete wall.



Groundwork for the first social spot, situated between the Tudor Sailing Club and the Andrew Simpson Watersport Centre, was completed. For this slabs that were removed as part of the Southsea Coastal Scheme were reused. It features a special compass design and is located next to one of the glass flood wall areas, so visitors will be able to enjoy unobstructed views over Langstone Harbour whilst taking a break.



Work in 2023 included final piling work along the coast from south of the Harvester to Langstone Harbour carpark and from south of Tangier Road to Milton Common, which is a total of 733m of steel sheet pile wall. A total of 733m of full height concrete flood defence wall with was constructed, using an astonishing 9287 tonnes of concrete and 3 out of 4 planned sets of egress steps were completed. Two sets of stairs are now open to the public, all four will be accessible once fully reopened. Finally the new 'bird island', a roost island for overwintering birds was completed and a small section was opened for the public to access during the winterbreak.

2023 also saw the creation of a dedicated brand for the North Portsea Coastal Scheme, similar in style to the Southsea Coastal scheme branding in order to emphasize the link between the two. All large engagement events (Big exhibition, summer road show etc.) included information on both schemes.



ENVIRONMENT AND WILDLIFE PROTECTION AT THE NORTH PORTSEA COASTAL SCHEME

Construction for the sea defence work at Langstone Harbour is limited to the period between April and September due to the presence of overwintering birds in the harbour.

To ensure further protection of the environment during construction, a silt curtain is used along the frontage to capture any silt from the construction activities. The curtain has a floating top which allows it to rise and drop with the tides and ensures that water quality is not affected.

A number of local ecological enhancements are included as part of the project:

ECOFORMLINER WALL

The award-winning* ecoformliner flood defence wall has a textured surface facing the sea, especially designed for this area to offer additional (vertical) habitat to a number of marine species and plants, offsetting habitat losses.

The project team worked with experts including the University of Glasgow and University of Bournemouth to design the mould. After completing a successful trial, which tested buildability and construction techniques, the ecoformliner is now being used on the entire new sea wall along Eastern Road - making it the first ever large-scale application of such a product in the UK, specifically designed for inter-tidal ecology.

As well as environmental benefits, the marine plant growth on the sea wall is expected to have practical advantages. Following installation, the vegetation should absorb wave energy, reduce temperature fluctuations, and reduce salt ingress and egress into the local ground water to create a more stable environment.

*In 2022 the scheme was awarded with the 'Coastal Management' award at the Flood and Coast Excellence Awards in June and shortlisted for the British Construction Industry Awards in the category Environment & Sustainability Initiative of the Year in October for the development of the ecoformliner.





SALTMARSH CREATION AND PROTECTION USING BESE GRIDS.

Biodegradable Elements for Starting Ecosystems (BESE) grids are another UK first, also installed in phase 3 of the North Portsea Coastal Scheme. The 3D mesh grid structures are used for habitat improvement and act as a temporary structure to start ecosystem restoration. The grids are made entirely out of a waste product, potato starch, and give damaged ecosystems the structure needed to support the colonising and growth of saltmarsh plants. At phase 3 (Tipner Lake) we planted 200m² of locally grown saltmarsh plants and reinstated 150m² of divided sedge. The saltmarsh plants were relocated from a habitat that would have been impacted by phase 4 of work. They now cover an 80m stretch that can be seen from Portsbridge roundabout.

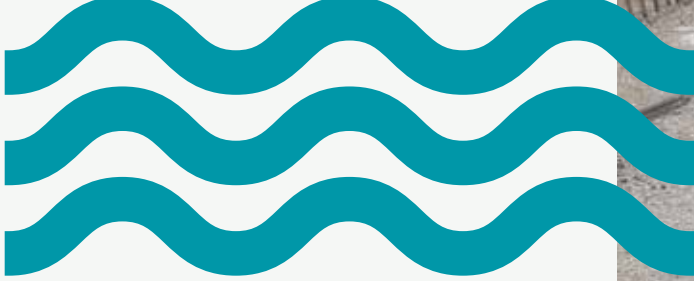
WILDFLOWER AND GRASS SEEDING & BEE-POST INSTALLATION

Bee-posts have been installed along this phase to attract more bees to the area and provide solitary bees with nesting places. The extensive planting in all areas along this phase is designed to be a mix of grass in some areas and coastal wildflowers in others. The coastal wildflower mix chosen has a high biodiversity value, with a 80% grass seed and 20% wildflower mix, and includes 26 different species of wildflower and grass. The selected planting also acts to support to the structure of the slopes, using the roots of the plants to ensure the ground is stabilised and will not be washed away by heavy rain.

TREE PLANTING

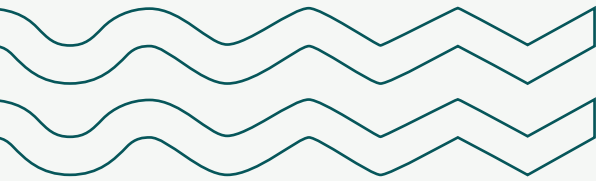
In this phase 4 of the North Portsea Coastal Scheme, over 200 trees are being planted. Species include native maples, pines and oaks, all carefully selected to withstand (and thrive in) coastal environments. The trees being planted tend to be larger, longer-lived and will bring the greatest benefits as they mature: cooling, storm water regulation, air quality improvements and providing opportunity for wildlife top name a few. Planting a mix of species is important to ensure our trees and wooded areas are resistant to future pests and diseases and climate impacts.





TIDAL POOLS

Tidal pools have been installed to retain water for marine life to populate. Species expected include seaweeds, barnacles, periwinkles and anemones. Three EConcrete® tidal pools were installed in the North Portsea Coastal Scheme at phase 3 and were the first of their kind in the UK. Phase 4 also introduced 'build-in' tidal pools, which are the base of the concrete sea defence wall and created as part of wall construction.



COCKLESHELL ISLAND

Our new 'bird island', a roost island for overwintering birds. A naming competition was launched in July 2023 and attracted over 240 entries and a lot of interest in the press and on socials. The name is a tribute to the Cockleshell Heroes who trained for months around Southsea and Langstone Harbour before setting off in December 1942 to a daring mission, using kayaks (nicknamed cockles) in occupied France. The common cockle is also present in Langstone Harbour and a major source of food for wading birds.

At phase 4 of the scheme an area of saltmarsh that had to be moved in an earlier phase was relocated and has reportedly taken on and is thriving again.



COMMUNICATION AND ENGAGEMENT

Regular stakeholder and community engagement activities are undertaken and the contractor supplies a Public Liaison Officer to manage stakeholder engagement, alongside Portsmouth City Council communications and engagement team.

In particular, extensive engagement has been undertaken with the Tudor Sailing Club, Andrew Simpson Centre, the Harvester and residents at Harbourside Caravan Park who are all located adjacent to the works and are most affected.

Due to overwintering birds the “construction season” is during the spring and summer months, and engagement and communications activities are focused around these months and include:

- In early 2023 a dedicated brand (mirroring the Southsea brand) was created and has been rolled out
- Monthly updates posted on the project webpage and circulated to 4,009 subscribers of the project mailing list - from January 2024 new dedicated bulletin through PCC govdelivery to include all Southsea subscribers
- Letter drops to affected stakeholders providing key project information
- Project newsletters posted on information noticeboards at positions near the site area
- In-person meetings with affected stakeholders to provide information and explain what is going on
- Hosted a “drop-in” event at the Harvester pub to provide early information for Harbourside residents when works were due to commence nearby
- Attendance at local community events (e.g. Party for Hilsea, talks for U3A and Rotary Club)
- A naming competition for the newly built bird island was run in summer 2023 and attracted over 240 entries and a lot of public interest in the press and on social media.
- Stakeholder site visits include colleagues from neighbouring councils, the EA, local councillors as well as a delegation from Singapore and Penny Mordaunt, 60 students from Portsmouth College
- Underway for 2024: dedicated Facebook page and website for North Portsea Coastal Scheme





FUNDING

The current financial status is below - Figures correct at December 2023

FUNDING SOURCE	VALUE
Allocated Grant in Aid	£67.4m
PCC Contribution	£282k
Department for Education Funding	£2.5m
Environment Agency – Environmental Statutory Allowance	£905.6k
TOTAL FUNDING SOURCES	£71,054,870



COMING NEXT...

In 2024 work will continue along Eastern Road, once the team returns for construction after the winterbreak in April:

- Completion of the last 200m (approx.) of sea defence wall between the Langstone Harbour Viewing car park to Tangiers Road, including the last set of stairs.
- Raising of the remaining areas along the wall to ensure a max. 1.2m wall height when walking along the coastal path.
- Landscaping, wildflower seeding and planting of more trees - over 200 new trees will have been planted in this phase when completed in 2024.
- Completion of all planned seating areas with benches, tables and way finders and finally reinstatement of the Langstone Harbour Viewing car park.
- An official opening ceremony is planned for the summer 2024 (once complete) including a naming ceremony for 'Cockleshell island' where press, stakeholders and the winners of the cockleshell island naming competition will be invited.
- A dedicated social media presence and website are underway for the North Portsea Coastal Scheme.





PHASE 5 - PORTS CREEK

Phase 5 of the North Portsea Coastal Scheme is located at Ports Creek, and is the final phase. This phase is set to start in autumn 2024 and has a design similar to the completed Phase 1 design at Anchorage Park.

The planned design consists of an earth bund, which provides the required flood defence level, with a rock armour toe. As this phase will be carried out in an area known for its green open spaces, the focus will be on retaining the natural feel by planting more trees, improved paths, and access to the coastal path along this frontage.

The planning application for the scheme has been submitted in 2023 and is awaiting approval, with construction currently programmed to start in late 2024

until winter 2026. Prior to construction, a contractor will be procured and initial vegetation clearance work will be carried out in summer 2024. Once the contractor is appointed, a more detailed programme will be available.

The team have worked with Historic England, Natural England, Network Rail and other statutory regulators to develop the design and construction methods that will be used in the scheme.

**WATCH THE ILLUSTRATION FLYOVER
FOR THE PLANNED DESIGN AT
PHASE 5 HERE →**






southsea
COASTAL SCHEME

 **Portsmouth**
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