



COASTAL SCHEME ACHIEVEMENTS



MESSAGE FROM THE PROJECT DIRECTOR



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Over a decade has passed since the strategy for Portsea Island Flood Risk was written and approved. In that time, through the production of pragmatic and cost beneficial business cases Portsmouth City Council started its funding relationship with the Environment Agency and Defra (Department for Environment, Food and Rural Affairs) to ensure residents and businesses are protected from coastal flooding for the next 100 years.

The journey has been a complex one which involved the formation of an integrated delivery team, bringing together multiple disciplines, as well as the formation of a cross party working group. The team's attendance at cabinet, planning meetings, councillor briefings, coastal defence roadshows as well as wider public engagement exercises are now a regular occurrence. Our commitment to the improvement of public realm and defending the city from flooding is ongoing and highly visible as evidenced in the current construction activity at Southsea and to the east of the island.

These schemes are a once in a generation opportunity to ensure the city stays safe and prosperous despite the ever-growing threat of climate change. 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.

Our work is of national importance as the largest local authority led flood defence scheme in the UK. It is also unique in working in an environment of historical and natural significance.

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.

GUY MASON

PROJECT DIRECTOR - SOUTHSEA AND NORTH PORTSEA COASTAL SCHEMES





During the projects, a number of jobs will be created for local residents. These include graduate positions, apprenticeships and various site-based roles.








SOUTHSEA COASTAL SCHEME ACHIEVEMENTS

The Southsea Coastal Scheme is the UK's largest local authority-led coastal defence project, worth more than £160M. 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 is due to open 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 August 2024. The full Scheme is due to be complete by 2028. The map below shows estimated dates of future construction phases.

The new flood defences in this area will protect:

 <p>More than 10,000 residential properties</p>	 <p>704 commercial properties</p>	 <p>16 residential properties at risk of coastal erosion</p>	 <p>3 scheduled monuments and 74 listed structures</p>	 <p>4 critical access routes at risk from flood water</p>
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Consultation is key to the Scheme, both with the community, stakeholders and within government. Prior to work commencing, the Scheme undertook the largest consultation phase ever undertaken by Portsmouth City Council.

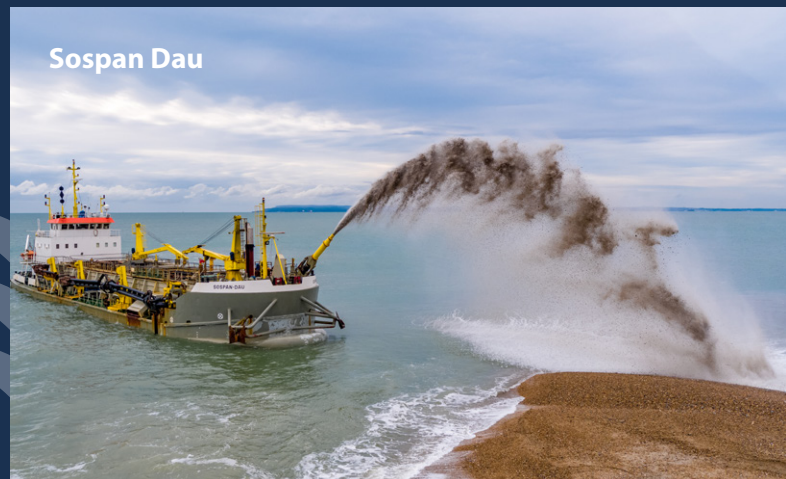




Rock Delivery

A project board and steering group meet regularly to ensure agreement on major aspects of the Scheme. Examples of this can be seen by recent decisions made by the project board and steering group, such as:

- Extension of the Frontage 4 (Southsea Castle) site boundary to undertake more work consecutively and hence reduce the overall project programme by 12 months and save £2m
- Early import of Frontage 3 (Southsea Common) rock to ensure supply certainty and reduce cost escalation and inflation pressures, saving £420k
- Re-alignment of Frontage 3 (Southsea Common) 2m seaward to reduce service diversion works and re-introduce echelon parking to the frontage
- Feature Lighting at Long Curtain Moat
- Public realm highlighting of historic assets
- Maximising walking and recreational space
- The inclusion of a split level prom at Southsea Castle.



Sospan Dau



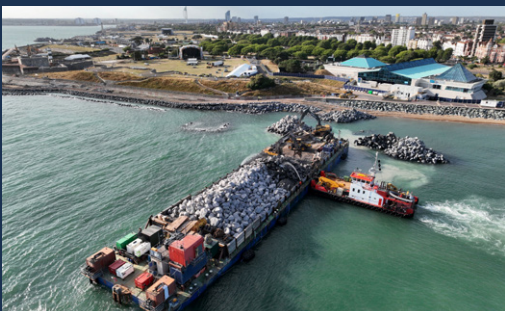
Theatre of the Sea

CONSTRUCTION HIGHLIGHTS

FRONTAGE 1 - LONG CURTAIN MOAT

Activity in this section has included:

- Demolition of the old seawall and a new seawall built
- Height and width of promenade increased
- 525 linear metres of sheet piles 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 installed
- Renewal of the Clarence Pier carpark



FRONTAGE 4 - SOUTHSEA CASTLE

Activity in this section has included:

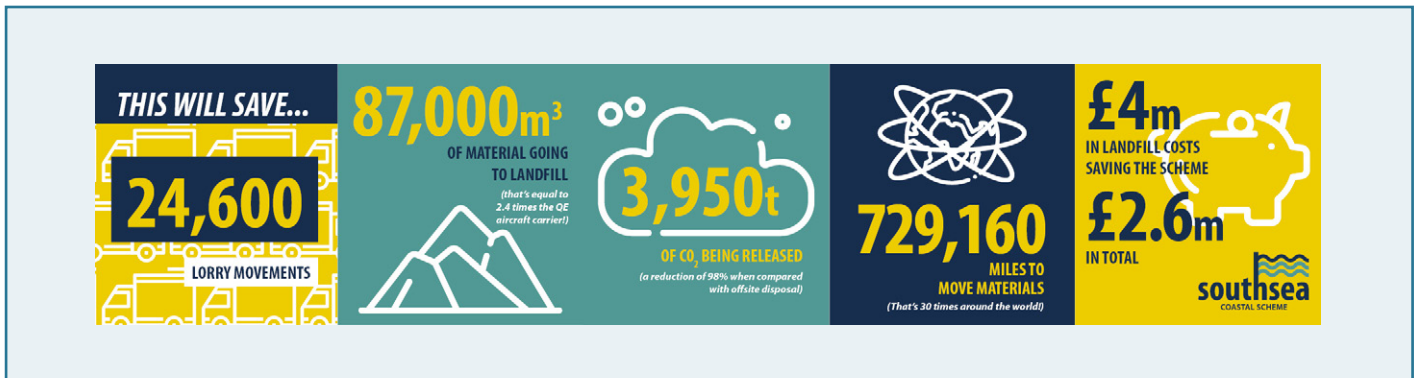
- 145 000 tonnes of rock imported to make up the new sea defences
- Phase 1 of rock work completed and phase 2 commenced November 2022
- 40 tide pools installed
- Installation of parapets delineating the new split level promenade.

Happening now at Southsea Castle is phase two of the rock work, involving placing the rock up against a 0.6m upstand wall to provide the primary flood defence. Around the castle the promenade will split to form a two-tier public area with seating incorporated between the two paths, providing a 'theatre of the sea' social space.

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 58 tide pools to enhance marine life. These concrete pools are designed to create ecosystems that mimic natural rock pools found on rocky coastlines.

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 that inhabited an area used by the (now) project office on a section of Southsea Common. An area of the Ministry of Defence field on Pier Road is fenced off for the geese during winter, with decoys and audio devices installed to attract the birds to the field.



At this frontage 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 1 (Long Curtain Moat), materials have been 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 have been several unexpected discoveries made during the works at historic Frontage 1, 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 find will be incorporated into the esplanade with appropriate interpretation.





Other finds in this area 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.



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.

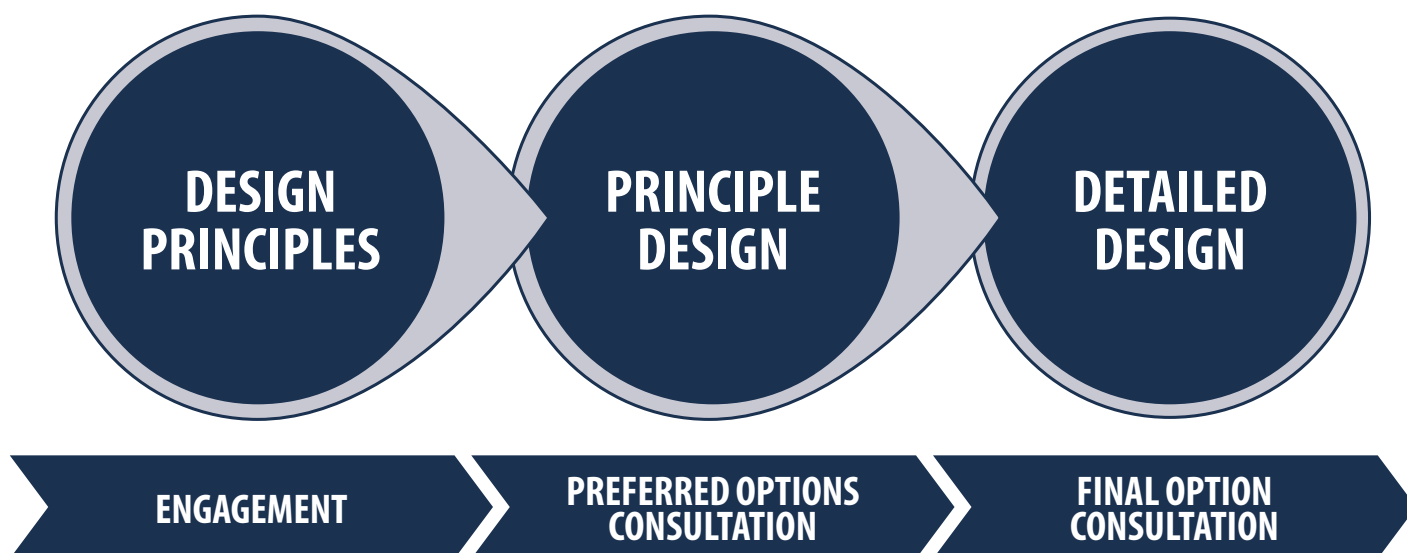


Figure 1: Stakeholder engagement and consultation process

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.



Site visitors for stakeholders are often organised, as well as visits to schools and learning events focused on STEM (Science, Technology, Engineering, Maths). Some of our activities include:

- **Weekly update sent via email bulletin to 5,400 subscribers**
- **Quarterly newsletters distributed to 27,000 households**
- **Regular updates and highlights shared via dedicated social media accounts (Facebook, 4,776 followers, Instagram 1,536 followers, Twitter 1,418 followers, LinkedIn 1,334 followers)**
- **Project Information Centre at Pier Rd site open during the week to encourage members of the public to drop in and ask questions and learn more about the works**
- **Regular local business engagement drop-ins**
- **Letterbox drops regarding upcoming works**
- **Attended 58 community and school events**
- **High profile stakeholder site visits including former Conservative Prime Minister Liz Truss MP, former Chief Executive of the Environment Agency Sir James Bevan, Citizens' Advice Chief Executive Dame Claire Moriarty, Labour MP for Portsmouth South Stephen Morgan, and former commander for the Portsmouth Naval Base Commodore JJ Bailey.**
- **International visitors from Singapore and Germany, with India visiting in mid-2023.**
- **Feature articles in the Institute of Civil Engineers (ICE) magazine and The News.**
- **Inclusion in the Hampshire schools geography curriculum.**
- **Community Stakeholder Engagement Group meetings to ensure groups with a vested interest in the Scheme (eg. Cycling groups) are well informed.**
- **Regular engagement regarding mitigating impacts on upcoming events such as Great South Run and Victorious Festival.**
- **Visits from several local councillors; most recently Lord Mayor Cllr Hugh Mason and Cllr Steve Pitt.**





AESTHETIC ENHANCEMENTS (PUBLIC REALM)

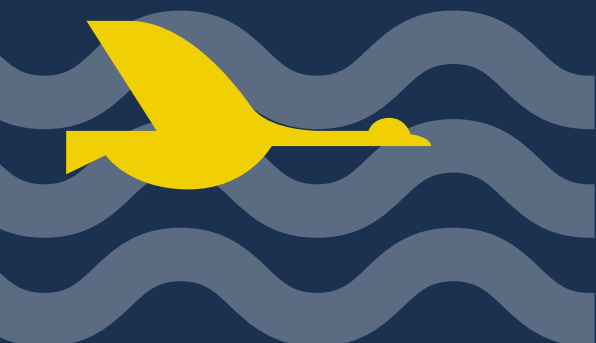


The Southsea Coastal Scheme is much more than sea defences. The project provides excellent opportunities to improve the seafront, enhancing the area for the benefit of all, from new lighting and seating to planting beds and the widening of existing walkways.

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.

Public art will be incorporated throughout the Scheme and, subject to securing funding, will be coordinated by the Culture and Leisure Directorate. To gauge public opinion, the Scheme held 'A Collaborative Arts Plan for Southsea and Portsmouth' exhibition over 10 days in November 2021. This included consideration of early suggestions and illustrated potentially how artwork could be incorporated into the Scheme to provide examples of the 'art of the possible'. Work on this has continued with a (soon to be finalised) Creative Engagement Framework to support the potential delivery of works into the Scheme.

At Frontage 1 (Long Curtain Moat) two new bridges have been installed. The wood from the old timber bridge has been kindly donated to the Cotswolds Canal Trust for canal renovation work on the lock gates. A new machined finished oak balance beam would have cost the charity up to £3000 each, and to complete the lock gates there were 32 beams needed. The old timber bridge at Southsea had 36 beams of the correct proportions and material so the Scheme was happy to help out. This also fits with the Scheme's ethos of 'zero waste'.





FUNDING

The Southsea Coastal Scheme is primarily funded by the Environment Agency. A successful funding bid was made to the Solent Local Enterprise Partnership for £5M, with additional funding recently secured from the Environment Agency. The Scheme won the 'Best Investment Business Case' category in the 2020 Flood & Coast Excellence Awards.

The current financial status is below - Figures correct at 5 December 2022

FUNDING SOURCE	VALUE
Environment Agency - FDGiA	£118,197,881 - Inc £10m for COVID continuity funding
Local Enterprise Partnership (LEP)	£5,000,000
Portsmouth City Council	£6,519,268
Environment Agency - OGD	£27,865,424
Environment Agency - Environmental	£100,000
PCC - Coastal Revenue	£17,232
TOTAL	£157,699,805

The Scheme is currently investigating addition funding sources. These are:

- **FCRM GiA – inflationary allowances.** Given fast paced changes in the sector, Defra and the Environment Agency have introduced guidance to allow projects to uplift their grant eligibility in line with inflationary changes. A further £18m claim being assessed
- **Environment Support Allowance** – Additional Grant from Defra to contribute towards the work required to mitigate against damage to the designated natural environment or to integrate environmental improvements into the schemes to improve environmental outcomes.
- **Department For Education** – Potential to work with the DFE to secure direct contributions towards the scheme given it reduces flood risk to schools and access roads to schools.

COMING NEXT...



FRONTAGE 5 - WEST

Work to the seafront area between the Pyramids and Speakers Corner will commence in spring/summer 2023. A planning application for an amended design was available online for comment on the Portsmouth

City Council website from late December 2022 until 6 February 2023. Defences here will comprise a stepped revetment and a vertical wall. Landscaping and beach nourishment will be undertaken.



FRONTAGE 3 - SOUTHSEA COMMON

Work will get underway in early 2024. The primary sea defences here will comprise stepped areas of promenade and rock. For time and efficiency reasons, the rock for the work has already been imported from Norway and is being stored on the seafront near Blue

Reef Aquarium. The promenade and road will be raised; a two-way cycle lane will be incorporated; and the promenade will be a constant 8m wide along the length of the frontage.

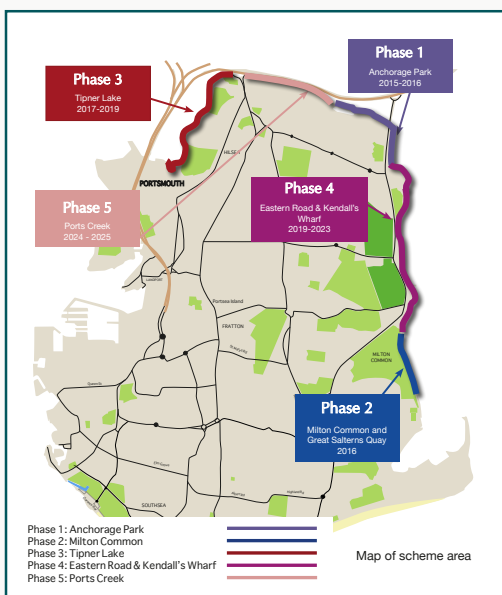
NORTH PORTSEA COASTAL SCHEME ACHIEVEMENTS

The North Portsea Island Coastal Defence 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 in a 10-year construction programme from 2015-2025.

Highlights of the NPI Scheme:

- £61.5million approved funds
- Winner of coastal management category in the 2022 Flood & Coast Excellence Awards
- 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 - 'Greening the grey'.



CONSTRUCTION HIGHLIGHTS

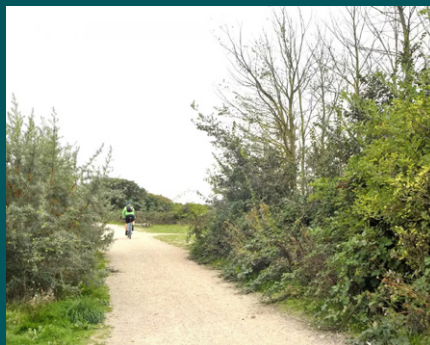
PHASE 1 - ANCHORAGE PARK 2015-2016

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



PHASE 2 - MILTON COMMON 2015

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.



PHASE 3 - TIPNER LAKE 2017-2019

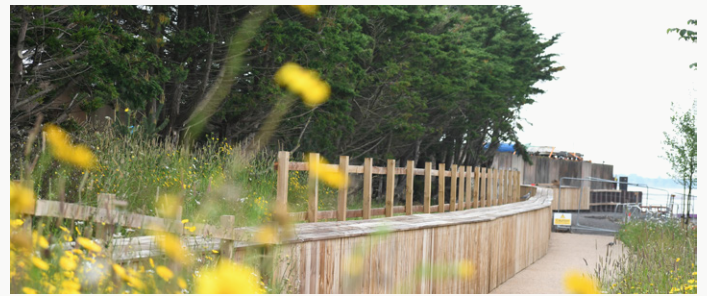
Construction of 1.9km of a seawall, a new improved shared footpath and cycleway, landscaping, play features and information points, introduction of tidal pools to help encourage marine biodiversity and 200m² of locally grown saltmarsh along with reinstatement of 150m² of divided sedge.



PHASE 4 - KENDALL'S WHARF AND EASTERN ROAD 2019 - 2023

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.

Working south along Eastern Road, phase 4b is being constructed through the summers of 2021 - 2023.

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.

ENVIRONMENT AND WILDLIFE PROTECTION

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.



The new concrete sea defence wall at Eastern Road is textured facing the sea, using an ecoformliner mould which imprints into the wall during construction.

As such, the texturing is part of the actual sea defence and has a 100-year design life. 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 intertidal 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.

BESE Grids (Biodegradable Elements for Starting Ecosystems) are another UK first installed in phase 3 of the Scheme: biodegradable 3D mesh grid structures made entirely out of waste product (potato starch) used to support the colonising and growth of saltmarsh plants. Saltmarsh vegetation can be found in Langstone Harbour, giving home to a rich variety of fish and invertebrates, and providing essential feeding, breeding, and habitat for many species of birds.

In recent years saltmarsh plants have been declining and the introduction of BESE grids is set to start the restoration of 200m² of this important habitat.

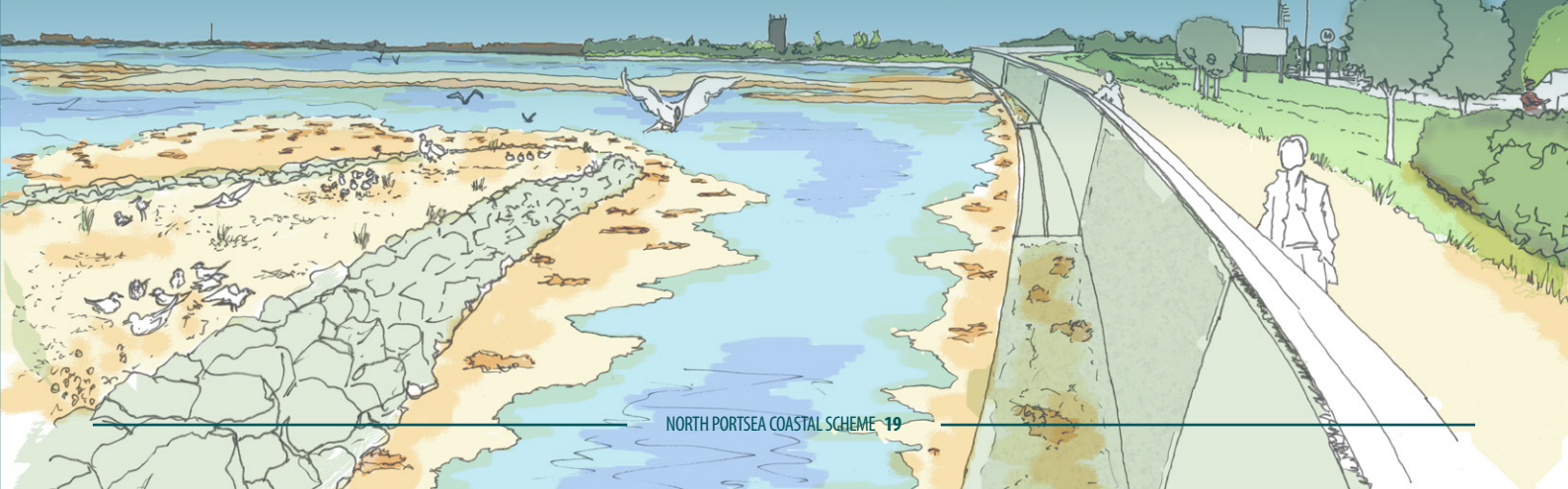
At phase 4 of the scheme an area of saltmarsh that had to be moved in an earlier phase was relocated and has reportedly taken on and is thriving again.

Three EONcrete tidal pools were installed in the North Portsea Island Defence Scheme at phase 3 and were the first of their kind in the UK. Now they are also in use at Southsea and planned for phases 4 and 5 for North Portsea.

The tidal pools mimic the natural world, designed to have the same shapes and textures found in nature and imitate natural rock pools by retaining water at low tides. This creates local ecosystems and allows an important variety of plant and animal life to thrive in a habitat protected from the elements.

There will also be new areas of seating and enhanced landscaping, including more trees and wildflowers.

In 2023, a new offshore bird island will be created. This will provide a high tide roost site for birds while forming niches for flora and fauna to colonise. Using the concrete waste that had to be removed from the old sea defence wall, the inner structure will be built entirely from recycled material. Then, covered with natural rock to mimic an organically occurring site, the island should attract a variety of birds, protected from any disturbance but close enough to the shore for residents to be able to enjoy the view.



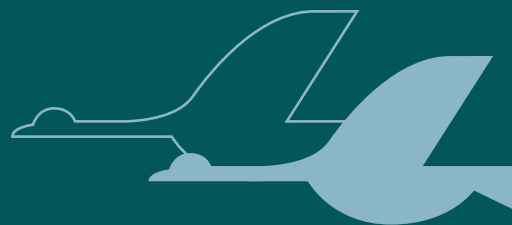


COMMUNICATION AND ENGAGEMENT

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.

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:

- Monthly updates posted on the project webpage and circulated to 4,009 subscribers of the project mailing list
- Progress photos uploaded to the website to provide a visual record of progress
- Letter drops to affected stakeholders providing key project information
- Project newsletters posted on information noticeboards at positions near the works
- In-person meetings with affected stakeholders to provide information and explain what is going on
- Quarterly newsletters delivered to 8000+ local households (PO3 area)
- Attendance at local community events (e.g. Party for Hilsea)
- Hosted a “drop-in” event at the Harvester pub to provide early information for Harbourside residents when works were due to commence nearby
- Articles in trade press including Concrete Journal and Environment Agency Innovation Magazine
- Stakeholder site visits include colleagues from neighbouring councils, the EA, local councillors as well as a delegation from Singapore and more recently Penny Mordaunt to name a few





FUNDING

The current financial status is below - Figures correct at December 2022. Further funding is being sought from the Environment Agency.

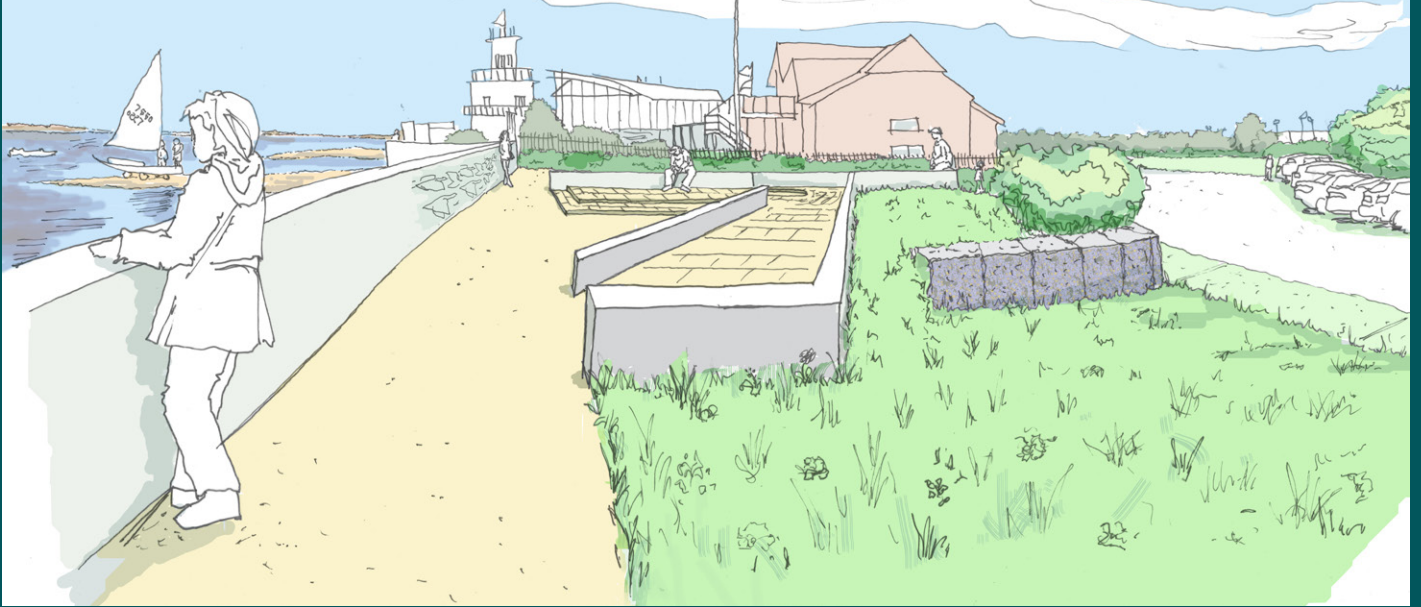
FUNDING SOURCE	VALUE
Allocated Grant in Aid	£61.5m
PCC Contribution	£282k
Department for Education Funding	£1m
Current proposed Project Cost including estimated inflation on Ports Creek	£68.8m
Project additional enhancements	£2.7m
PCC - Coastal Revenue	£17,232
TOTAL	£71.5M



COMING NEXT...

In 2023 work will continue along Eastern Road, building the new sea wall and enhancing and widening the coastal path which will tie in with phase 2 at Milton Common once complete. The area will also benefit

from new seating and social spots as well as many planned environmental enhancements, including more wildflowers, trees and bee posts.



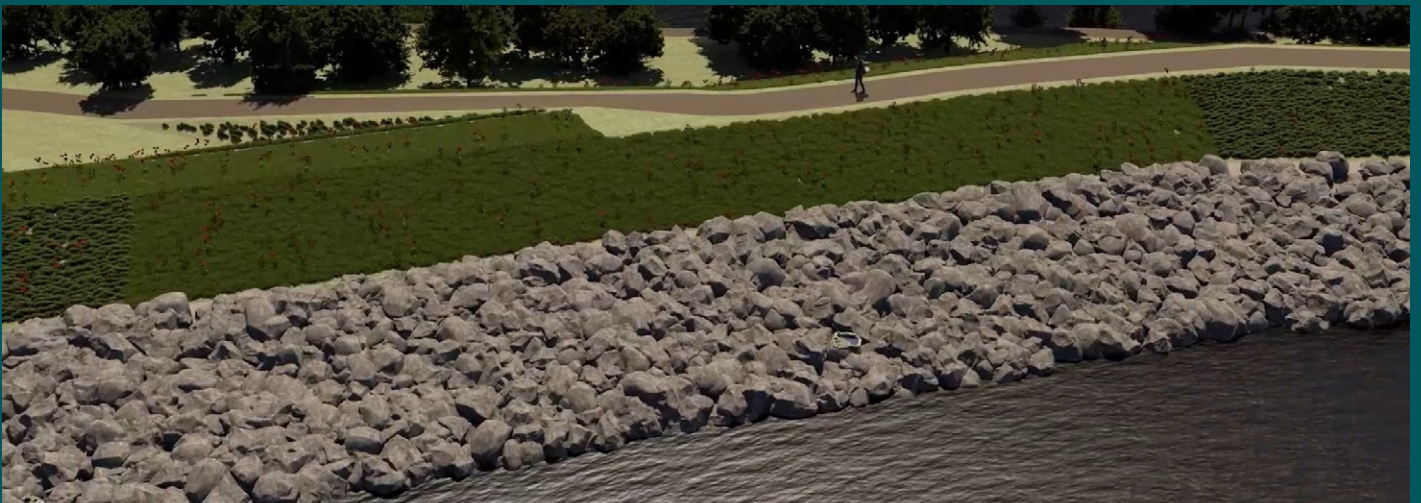
PHASE 5 - PORTS CREEK 2024-2025

The last phase of the North Portsea Coastal Defence Scheme is located at Ports Creek, at the very north of Portsea Island. The new defence will tie in to the completed phase 1 at Anchorage Park and with very similar design, it will tie in visually.

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 will be submitted in winter 2022, with construction currently programmed to start in late 2023 until winter 2025. Prior to construction, a contractor will be procured and initial vegetation clearance work will be carried out. Once the contractor is appointed, a more detailed programme will be available.





southsea
COASTAL SCHEME



north portsea
COASTAL SCHEME