Poole Bridge to Hunger Hill Flood Defence Scheme



The area from Poole Bridge to Hunger Hill is the last remaining undefended waterfront in the town centre. There is a present high risk of tidal flooding which increases significantly over the next century due to climate change and sea level rise. BCP Council, in collaboration with the Environment Agency, landowners, developers and other relevant organisations is working to provide new flood defences to reduce the risk to residents and properties in Poole town centre, the Old Town and surrounding areas over the next 100 years.

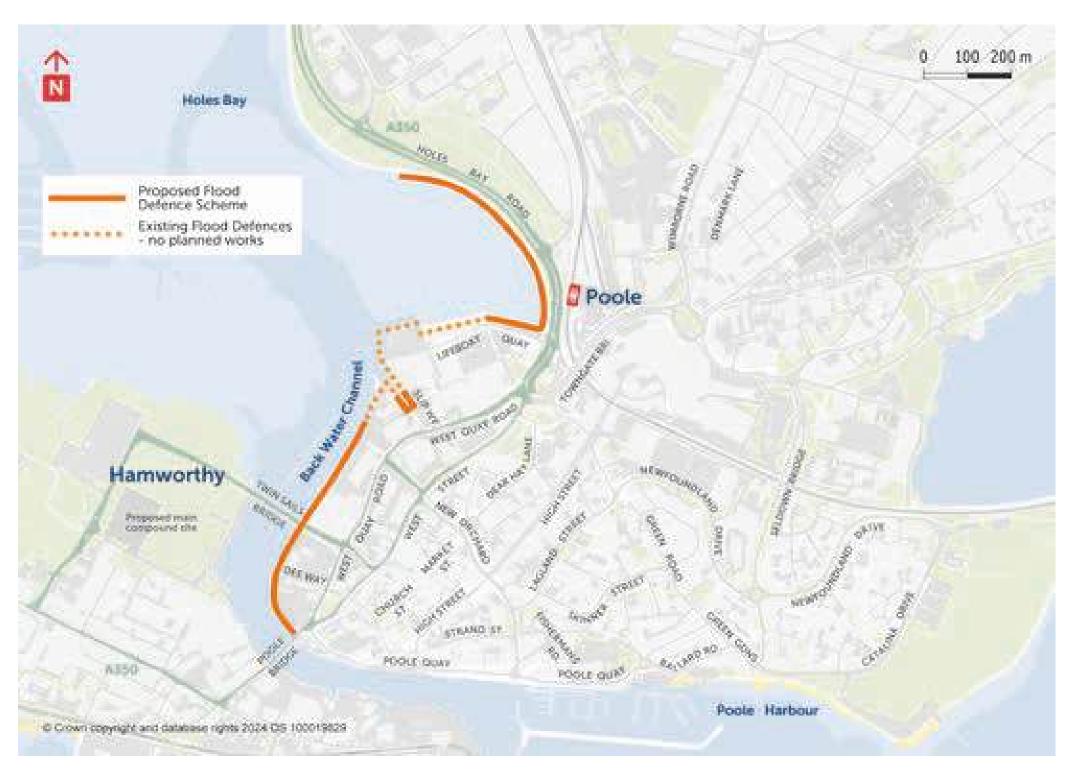
The proposed scheme will span approx. 1.5 km along the eastern side of Holes Bay. When constructed, it will work in conjunction with other nearby flood defences; including the Creekmoor and Sterte drainage channels as well as the raised quayside wall along Poole Quay.

Why flood defences are needed

While some properties adjacent to Back Water Channel have flood resilience built in eg. raised thresholds to prevent flooding, others are critically low and are in a state of disrepair.

Recent developments have only provided raised defence lines along short lengths. However, this still leaves the whole area vulnerable to tidal flooding which is expected to increase in frequency and severity with climate change. Extensive efforts are needed to raise up the remaining land levels and close the gaps in the defence line to ensure that the local community is effectively safeguarded against flood risk.





The proposed scheme along Back Water Channel, shows the required length of defences needed to reduce tidal flood risk.



SOUTH WEST Flood & Coastal

South West Flood & Coastal is a entre of expertise hosted by BCP Council. We work with our communities and partners to address the challenges of flooding and coastal erosion in a changing climate.

Protecting communities from flood risk

The Environment Agency strongly support the delivery of a permanent flood defence scheme along Back Water Channel. The Poole Bay, Poole Harbour and Wareham, Flood & Coastal Erosid Risk Management (FCERM) Strategy (2014), identified that within the whole Central Poole Area there are 573 properties at flood risk in the present day. This is predicted to rise to over 2,000 properties by 2110.



A tidal flood event on West Quay Road by Poole Bridge, recorded in 2008.

What is meant by flood risk?

Flood risk refers to the likelihood and potential impact of flooding in a given area in any given year. Statistical probability calculations using the frequency and intensity of past storm events are made and these are expressed in terms of High, Medium or Low risk.

The proposed flood defence scheme is in an area of high risk which indicates a chance of annual flooding. A flood defence scheme in this area is crucial to reduce current day tidal flood risk as well as addressing future sea level rise predictions, i line with national guidance.

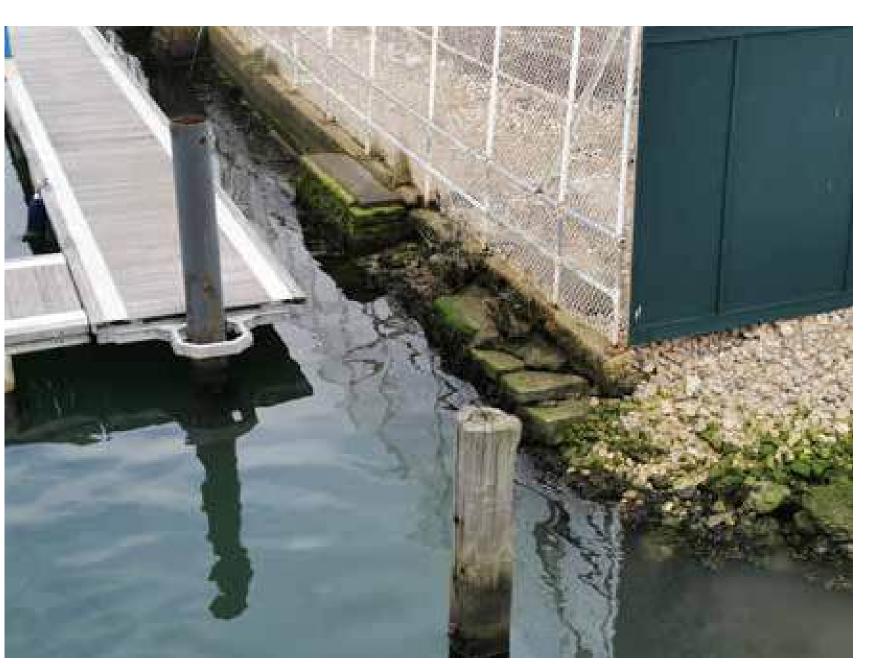
A high risk of flooding exists both now and in the future with the impacts of climate change. Today, there is flood potential on a normal high spring tide with only a small surge (e.g. 0.2m) and we have seen this tidal overtopping take place several times in the last five years.

New flood defences need to be built up to a crest level height of 3.6m AOD* (Above Ordnance Datum) to adequately reduce flood risk over the next 100 years.

*Above Ordnance Datum (AOD) is a fixed reference level which has replaced 'above sea level' as the standard reference from which vertical heights on maps are measured.

Current condition of flood defences

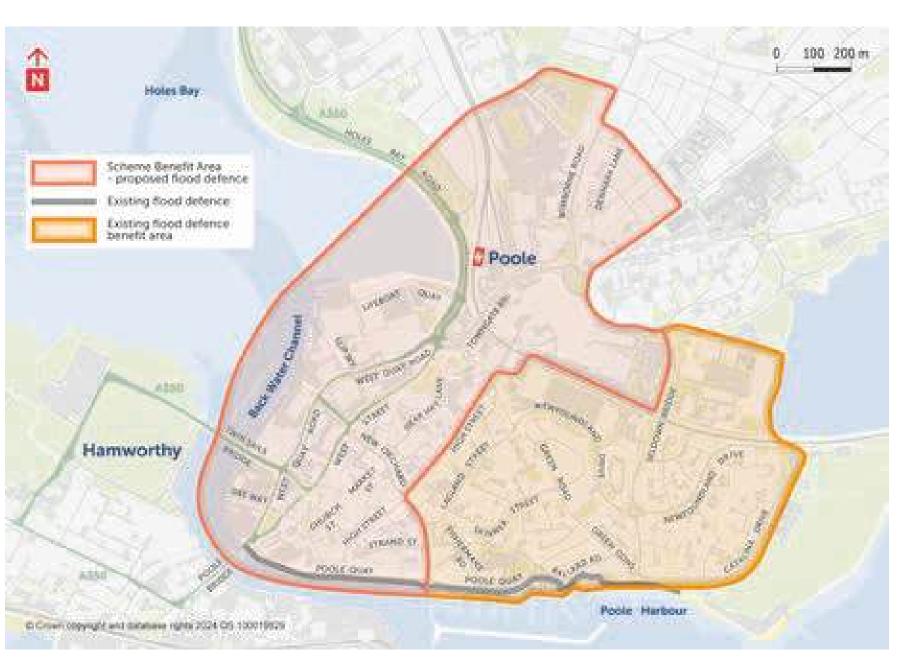
The land adjacent to Back Water Channel between Poole Bridge to Hunger Hill has many private owners and lease holders. The current quay walls simply retain the earth and are not considered to be flood defence infrastructure. Many do not have a crest level higher than the land behind and some structures require urgent



An example of a low-lying quay wall on Back Water Channel showing the urgent need for upgraded flood

What is the cost of doing nothing?

Without the proposed flood defence scheme, the potential cost of tidal flooding damages to town centre infrastructure and properties, over the next 100 years, could exceed £161 million. This is the area highlighted in red on the map below. By calculating the cost of damages in a 'do nothing' scenario it enables us to bid for central government Grant in Aid funding so that we can do something to reduce flood risk to local communities. The adjacent area (highlighted orange) shows the area which was used to gain funding for the raising of Poole Quay's flood







Plans for constructing the new flood defence

In recognition that regeneration was not forthcoming to enable flood risk to be managed, we tabled the option of a Council led scheme and it gained business case approval by BCP Cabinet

In January 2021, the Environment Agency confirmed £12.4 million of funding to build the new 1.5km flood defence infrastructure. This is fundamental to the area's safety and development, as outlined in BCP Council's Local Plan and FCERM Strategy.

We have been working with landowners, developers, the Environment Agency, Poole Harbour Commissioners and other relevant organisations to help refine the most efficient and effective flood management design whilst acknowledging known site and environmental

An Adaptive Approach

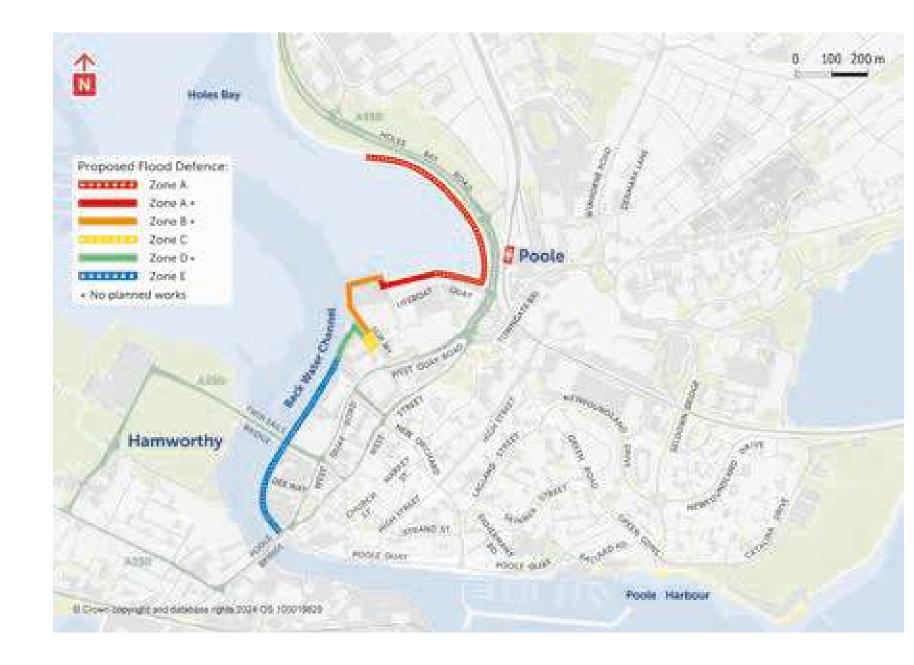
BCP Council is working with design and environmental consultant, WSP and local contractor, Knights Brown to design a flood defence scheme that can be adapted in the future when it will be clear how accurate sea level rise predictions are.

This allows us to make best use of the current available funding and still provide the desired standard of protection over the scheme life. In the short term it means we can reduce the visua impact of defences and in the long term the height of defences can be increased gradually to keep pace with climate change.

After construction, BCP Council plans to take ownership and maintenance responsibility for the new flood defence infrastructure. This is an important aspect of ensuring it is managed and adapted appropriately in the future.

Scheme area zones

The scheme area will be sub-divided into five zones with interventions planned for 2071 and 2121.



Zone A – **Holes Bay Road & Lifeboat Quay.** Defences will be raised to 2.65m AOD*, then raised again to 3.6m AOD in 2071.

- RNLI All Weather Lifeboat Station. Already protected for the next 85 years. No

Zone C – **Slip Way.**

To make best use of existing assets, ground levels will be raised to 2.49m AOD* and then raised again to 3.6m AOD in 2071.

Zone D – **RNLI College.**

Already protected for the next 50 years. No planned works.

Zone E – **RNLI car park to Poole Bridge.**

It is more cost effective to replace the current quay walls, raising the height to 3.6m AOD*.

What construction will look like





An example of the construction methods used on Poole Quay for sea wall raising. The techniques will be similar along Back Water Channel. Zone A & C works will take place from the land but the vast majority of Zone E works will take place from the water.





Improving the harbour environment

The proposed flood defence scheme is adjacent to Poole Harbour which has a range of protected special designations including:

- Ramsar wetland sites of international importance
- · Site of Special Scientific Interest (SSSI)
- Special Protection Area (SPA)

To carry out construction works in the Harbour, a range of environmental assessments are required from Natural England and the Marine Management Organisation, as well as planning permission from BCP Council.



Holes Bay intertidal saltmarsh and mudflats are covered at high tide and uncovered at low tide.

Biodiversity Net Gain (BNG)

From February 2024, it became mandatory for all major developments requiring planning permission to demonstrate how it will have a positive impact on the environment and wildlife habitats by creating new or improving existing green corridors. As part of our environmental commitment, we will be implementing a range of enhancements designed to help meet the 10% net gain target to increase the biodiversity value of the land following development.

This new BNG law is in addition to the current laws. including the Town & Country Planning Act 1990 and the Environment Act 2021.



Short-snouted Seahorse (Hippocampus hippocampus) is native to Dorset.

The Moors at Arne

The Poole Bay, Poole Harbour and Wareham, Flood & Coastal Erosion Risk Management Strategy (2014) identified the need to compensate for climate change impacts on intertidal habitat (the area above water level at low tide and underwater at high tide) caused by future flood defences around Poole Harbour. Up to 80 hectares of habitat including intertidal saltmarsh and mudflats will be created at Arne. Salt marshes provide essential habitats (and feeding grounds) for many species of animal and plants and help protect shorelines from coastal erosion.

Planned environmental enhancements

Wintering & breeding birds - Specific areas within the flood defence scheme will be managed to enhance conditions for birds. Piling works will be completed over the winter months, away from the areas which provide shelter to wintering birds.

Fish breeding seasons – Sensitive construction methods will be used to mitigate impacts on fish and support breeding cycles of local fish species, ensuring their populations remain robust.

Seahorses & sea sponges – To maintain breeding grounds for seahorses (crucial for the ecological diversity of marine environments) we will use tailored construction phasing to minimise disruption to their natural breeding cycles. We will also introduce enhancement measures on the

Marine habitat enhancement installations Ropes and recycled wooden timbers will be strategically placed to mimic the natural marine environment, providing additional habitats for

Tree management – At Lifeboat Quay we will ensure that replacement trees are appropriate for coastal conditions and beneficial to native species.



The wintering population of Pied Avocet in Poole Harbour has significantly increased in recent years.





Visualising the proposed flood defences

The illustrations show several zones within the proposed scheme to help visualise what the area will look like after construction (subject to planning). The proposed new flood defence structure will be built as close as possible to the existing quay edge. The space between the old walls and the new will be filled.

Zone A – Holes Bay Road (A350) to Lifeboat Quay

To reduce the risk of tidal flooding in Poole Town Centre, the proposed flood defence scheme will blend in with high ground at both ends of Zone A, near Sterte Ave West and at the Aqua Apartments. Generally, the path will be raised and widened, and the rock revetment will be upgraded. At certain pinch points where the path cannot be raised, sheet piles will be installed adjacent to the rock revetment. Surface water from the new path will be directed to the grassed area.

The raised Holes Bay path will gradually slope down to the existing pedestrian crossings on Holes Bay Road and Lifeboat Quay. The defence line will run parallel to Lifeboat Quay, to avoid SSE's high voltage electricity cables which supply the town of Poole. Two flood gates will be installed: one on the corner of Asda's waterfront path and one at the pedestrian crossing. Both will be closed when risk of flooding is high and allows easy access during normal conditions. Some trees and self-seeded plants will be removed and after construction, will be replaced with low lying, low maintenance coastal planting.



The land around the access point to the harbour will be raised to reduce flood risk for the next 50 years. Marine vessels stored at this location will be rearranged after construction to accommodate the new defence height.







Visualising the proposed flood defences



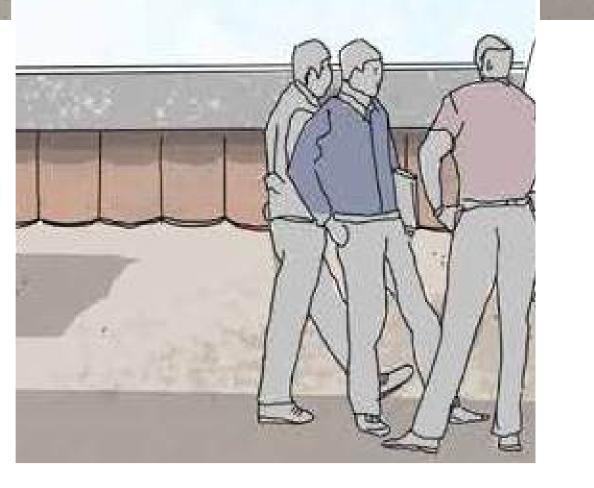
Zone E – RNLI car park to Poole Bridge

A full-height, steel tubular and sheet-piled wall designed to withstand tidal forces over the next 100 years will be constructed from the RNLI car park to Poole Bridge. It will pass in front of the new development, The Waterfront. At Sunseeker, the boat hoist will remain operational and will have additional defence features so it can be sealed when the risk of flooding is high. Existing pontoons will be re-instated after construction.



Zone E – Whittles Way

At Whittles Way a flood gate will be installed which will be closed to protect the town when there is flood risk. In normal conditions it will remain open allowing vehicular, harbour and pedestrian access.



Zone E – Dee Way

The new wall will continue across the privately owned Dee Way to reduce flood risk in the Old Town and surrounding areas. Access to the harbour here will be lost. A flood gate will be installed by Poole Moorings and Jetties to avoid business closure.



Zone E – Arthur Bray's Yard to Poole

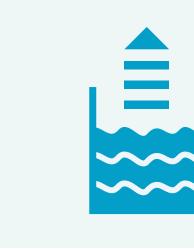
The full-height, steel tubular and sheet-piled wall continues to Poole Bridge. In front of Poole Amateur Rowing Club, a flood gate will be installed to enable it to continue operating from its





Unlocking land for regeneration

Sea level is predicted to rise over the next century. The proposed defence scheme will reduce flood risk to the local community while enabling BCP Council to continue its commitment to rejuvenate the area by encouraging a vibrant, attractive and sustainable mix of homes and businesses.



Regeneration enabling works



Sheet and Tubular piling

Steel tubular and sheet piles will be driven into the seabed as close to the existing quay wall as possible to provide a raised level of flood defence, along with localised land raising. A capping beam will be installed on top, and this indicates the height of the future quay wall edge at 3.6m AOD.



Back-filling behind new defence wall

The gap between the raised height sheet piled flood defence and the original quay wall edge will be filled in. Once the new infrastructure is completed, the flood risk for Poole town centre, the Old Town and surrounding areas has been reduced for the next 100 years.

Future development potential

Private Development

Once the flood defence is constructed, we anticipate private landowners and developers will begin to submit planning proposals to regenerate the area. As indicated in the Local Plan, buildings are expected to provide vibrant frontages on the ground-floor for shops, cafes and restaurants, while upper floors will provide new homes.



After construction, land levels will be raised to 3.6m AOD ensuring that flood risk to new and existing properties is reduced over the next century. BCP Council aims to work with landowners and developers to deliver the Local Plan aspiration to create a new public quayside and leisure route around Poole Harbour.







Next Steps



Since 2018, we have been carrying out investigatory and supporting work to develop and design the scheme. These stages have included asset condition assessments, flood modelling, optioneering engineering solutions, economic appraisals, extensive engagement (with landowners, developers and businesses) and rigorous environmental impact assessments.

Whilst we recognise that construction activities may cause some short-term disruption to people, businesses, and organisations within the local community, we are committed to actively seeking ways to minimise any impacts.

Timeline

- Planning Application submission: Autumn 2024
- Planning decision expected: Winter 2024/25
- · Construction Phases (will take place between):
- Zone A April 2025 September 2025
- Zone C April 2025 September 2025 - Zone E – October 2025 – June 2026

Online evening meeting On Wednesday 11 September at

September 2024.

presentation with a Q&A session. If you'd like to join us, book your

Have your say



Have your say – Complete a survey

While we are in our planning stage, we'd like

you to tell us if there are useful temporary ar-

rangements we could consider to help shape

our approach to managing construction im-

pacts. This consultation closes on Monday 30

The Project Team

We have been working in collaboration with a team of specialists to help refine the most efficient and effective flood management design whilst acknowledging the known site constraints, such as buried utilities and environmental restrictions such as wintering birds and migratory fish.



South West Flood & Coastal is a centre of expertise hosted by BCP Council. We work with our communities and partners to address the challenges of flooding and coastal erosion in a changing climate.



The Environment Agency provides the strategic overview and funding approvals for the national Flood & Coastal Erosion Risk Management



Knights Brown is a privately owned regional construction company based in Ringwood. Early contractor involvement includes improvements to the scheme's buildability to minimise the build programme and value engineer costs, while reducing environmental



WSP is one of the world's leading engineering and professional services firms and provides design services and environmental analysis for coastal projects to ensure that shores are protected and



Dalcour Maclaren is a specialist in securing land rights, by utilising statutory powers and negotiations, for utility & infrastructure schemes including flood resilience, surface water management, clean and foul water, roads, rail and airports.



