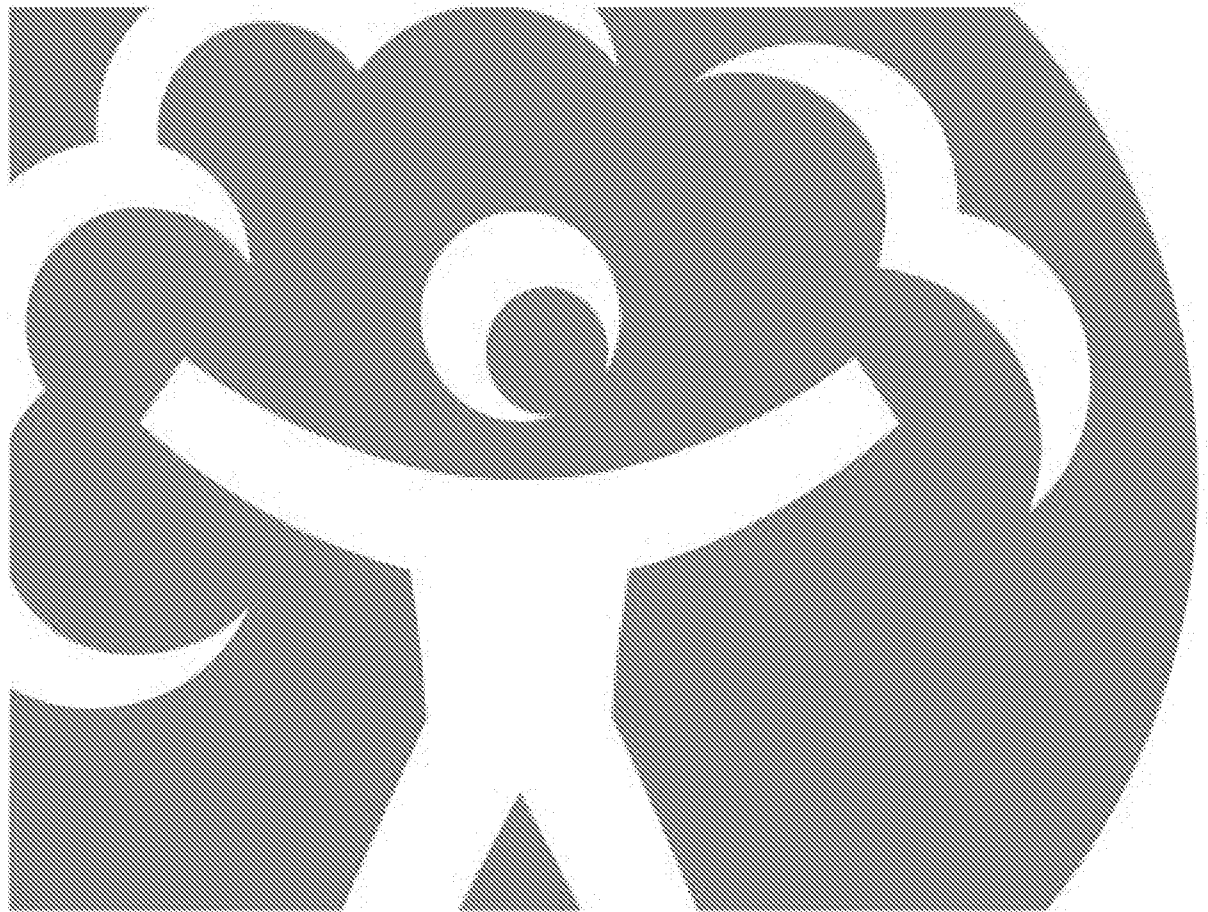




Littlehampton R4 Flood Defences

Flood Risk Statement

Revision A – 8 September 2017

We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

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Quality Assurance

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Approvals

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This statement has been prepared for the Environment Agency to support the planning application for the Flood Defence Wall at Riverside Autos, River Road, Littlehampton. This section of wall forms the final part of the recently constructed "Littlehampton Arun East Bank Tidal Walls Flood Defence Scheme".

This statement should be read in conjunction with the "Flood Risk Statement for Littlehampton Arun East Bank Tidal Walls Flood Defence Scheme", (Halcrow, May 2013) issued in support of the planning application for the works north of the A259 road bridge (Reach 6) and along Pharos Quay (Reach 4), and one for public realm enhancements along Arun Parade (Reach 1) and Pier Road (Reach 2). A map showing the reach locations is presented in Section 2, Figure 2.4 of the report.

The Halcrow report sets out the background, strategy and proposed construction for the flood defences that have been constructed. The new section of wall is an integral part of this strategy and is designed to complement the existing flood defence walls. Currently in the event of flood warnings, the Environment Agency have to install temporary flood defences across the missing section (approximately 26 metres in length). This requires a road closure.

2.1 Fluvial / Tidal Flood Risk

The following figures are taken from the EA Flood Risk maps (Aug 2017). Fig.1 shows the extent of Fluvial / Tidal flooding that is predicted if the Flood Defences are not present and so highlights the importance of completing this section of flood defence wall.

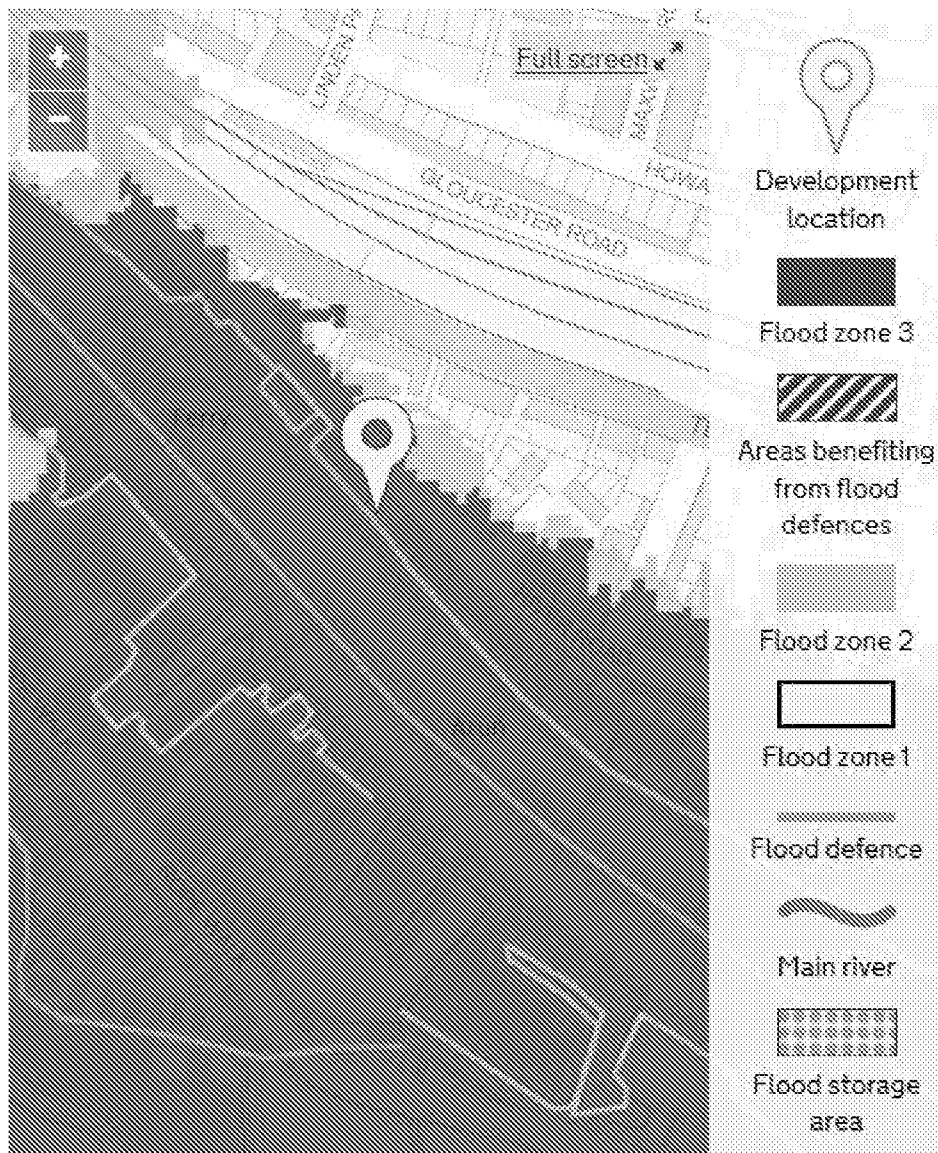


Figure 1 Fluvial / Tidal Flood Risk – EA Flood Risk Map (source: <https://flood-map-for-planning.service.gov.uk/summary/502415/102111>)

2.2 Pluvial Flood Risk

Fig 2 indicates that there is a low risk of Pluvial flooding due to overland flow.

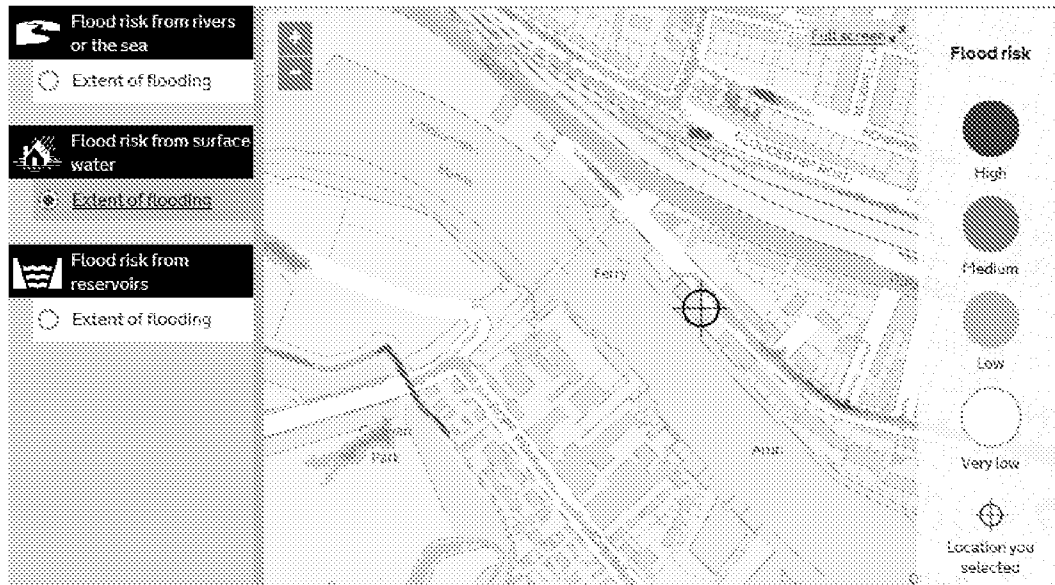


Figure 2 Pluvial Flood Risk – EA Flood Risk Map (Source: <https://flood-warning-information.service.gov.uk/long-term-flood-risk/map?eastings=502343.69&northings=102143&address=10023374044&map=RiversOrSea>)

The works will not see any significant change in land use and will not increase impermeable surface area.

Surface water drainage within the adjacent property boundary may be impacted by construction of the Flood Defence. It is recommended that any piped outfalls are retained and incorporated into the design of the flood defence.

2.3 Drainage Flood Risk

The proposed Flood Defence does not impact the foul water or highway drainage systems.

2.4 Groundwater Flood Risk

Groundwater flow paths may be impacted by construction of the Flood Defence, as such drainage holes will be installed within the sheetpiles that will allow the ground water to drain to the river, as per current conditions.

In addition, to mitigate the potential for flood water build up on the landward side of the flood defences, drainage will be provided at ground level through the capping beam. The drains shall be sized for a 1 in 300 year event and shall be located at the finished surface level, with tidal flaps provided on the wet side of the capping beam to prevent flooding from the river.

The sheet pile wall drainage system shall incorporate granular material and weep holes to allow the free drainage of water, in order to prevent the build-up of water behind the wall, including the water differential from tidal lag. Weep holes shall be protected with geotextile to prevent the loss of backfill through the wall.

The final section of wall is detailed in the attached drawings and summarised as follows:

Table 1 Project Summary

Reach	Type Defences	Delivered	SoP	Design Life
4A River Road South	A raised new vertical sheet piled flood defence wall installed riverward of the existing wall and capped with concrete. The wall will be approximately 100m long and 1.0 m higher than the existing wall.	2018	1 in 300 to year 75	100yrs

Without the flood defences, a significant number of properties (residential and commercial) are at risk as presented in the Halcrow Flood Strategy Report, section 3.3.

The scheme does not impact or provide any increased protection to surface water/groundwater flooding behind the defences.

As with the original scheme, it is deemed that any narrowing of the channel (permanent and temporary) is negligible and will only marginally throttle flows.

During installation of the sheet piles, most of the equipment will be stored on the jack-up barge or at the Tarmac Wharf. Only minimum equipment will be stored on land at Riverside Autos. In the event of extreme weather the barge will either remain in location with equipment appropriately secured on deck, or the barge shall be moved to the Tarmac wharf and moored.

During backfilling behind the sheet pile wall and construction of the concrete capping beam, materials and equipment will be stored behind existing defences and temporary defences provided by J.T. Mackley and Co during the works to limit the potential for damage and water pollution.

Whilst working on the project, J.T. Mackley and Co will be registered with the local Environment Agency Flood Incident Management team for automatic notification of flood warnings to ensure that equipment, materials and personnel can be removed from the area if the risk is severe enough.

Where existing defences are compromised during the construction work, temporary works will ensure risk to property is managed. Any temporary works will also require Environment Agency flood Risk Activity Permit consent (or expression of comfort), which will comprise an agreed method of works to minimise/avoid construction phase risk. Method will have prior agreement of the Harbour Authority.

No existing drainage or tidal flaps are noted along the existing flood defence walls on lot 47. However, any tidal flaps affected by the works will be replaced / refurbished as necessary. Any drainage system disturbed during construction will be reinstated or replaced to the same standard as before the works.

The development is deemed appropriate under the National Planning Policy Framework. The scheme is an integral part of the recently constructed "Littlehampton Arun East Bank Tidal Walls Flood Defence Scheme."

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