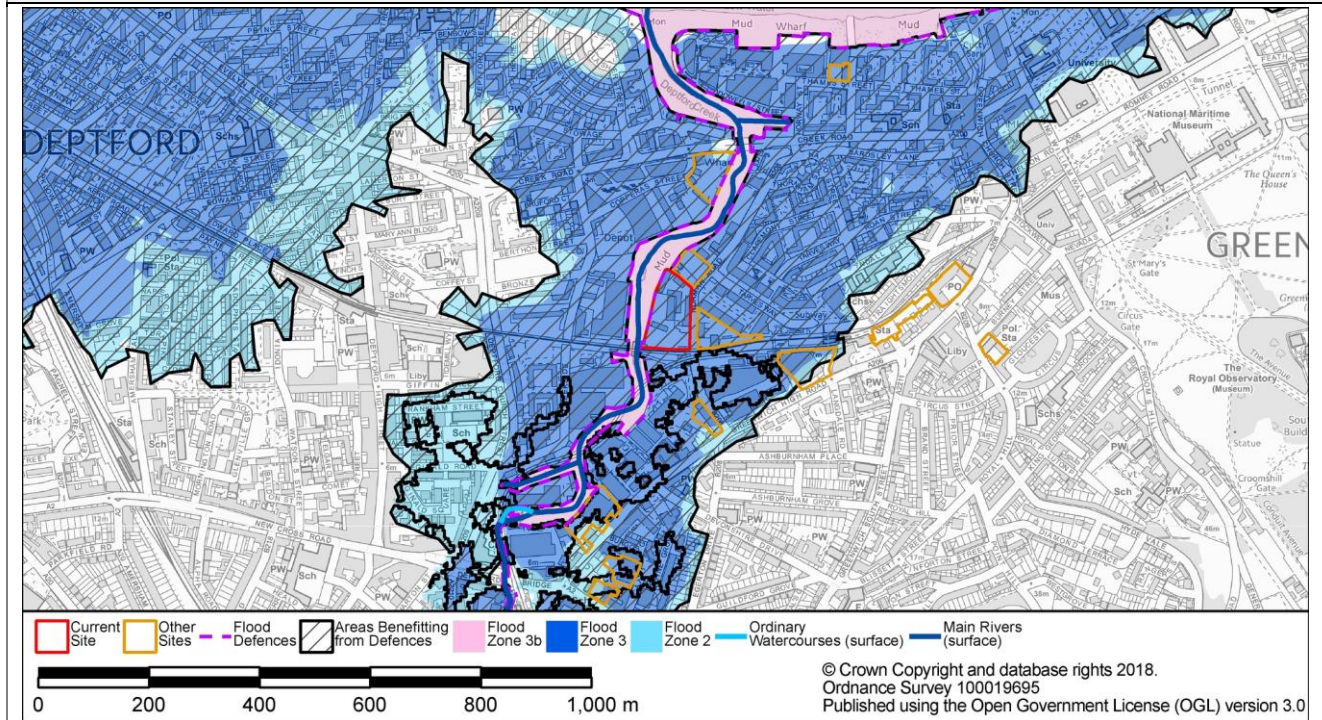


**Site Name: Brookmarsh Industrial Estate & Phoenix Wharf, Lower Norman Road**

<b>Site ID:</b>	G7	<b>Site Address:</b>	Greenwich	<b>Area (ha):</b>	0.94
<b>Current Use:</b>	1960970's small business / industrial units, builders merchant	<b>Proposed Use:</b>	Light Industry/ Small Business Units/Offices (B1).	<b>Vulnerability Classification:</b>	Less Vulnerable

<b>Tidal Source:</b>				
<b>Flood Zone 1 (&lt;0.1% AEP):</b>	<b>Flood Zone 2 (0.1% AEP):</b>	<b>Flood Zone 3 (1% AEP):</b>	<b>Flood Zone 3b (5%AEP):</b>	<b>Area Benefiting from Defences:</b>
0%	100%	100%	0%	99.84%

**Flood Zones and Flood Defences**

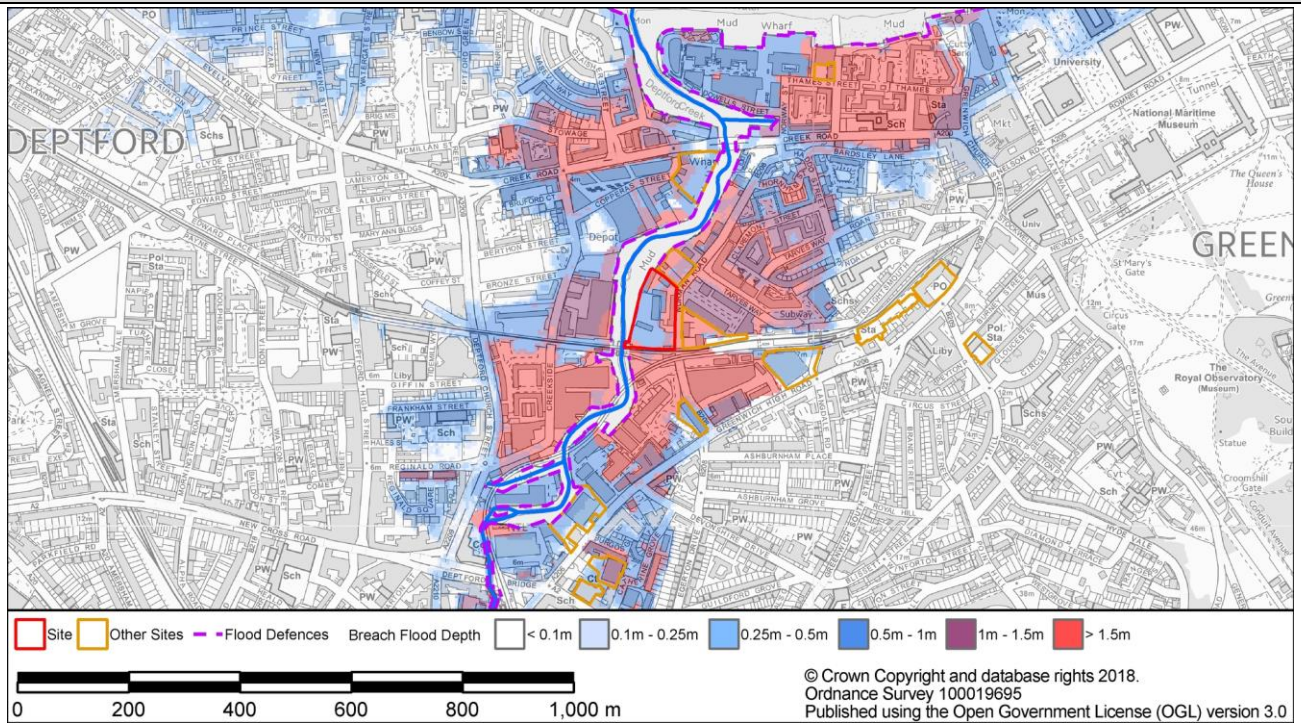


**Figure A - Flood Zones**

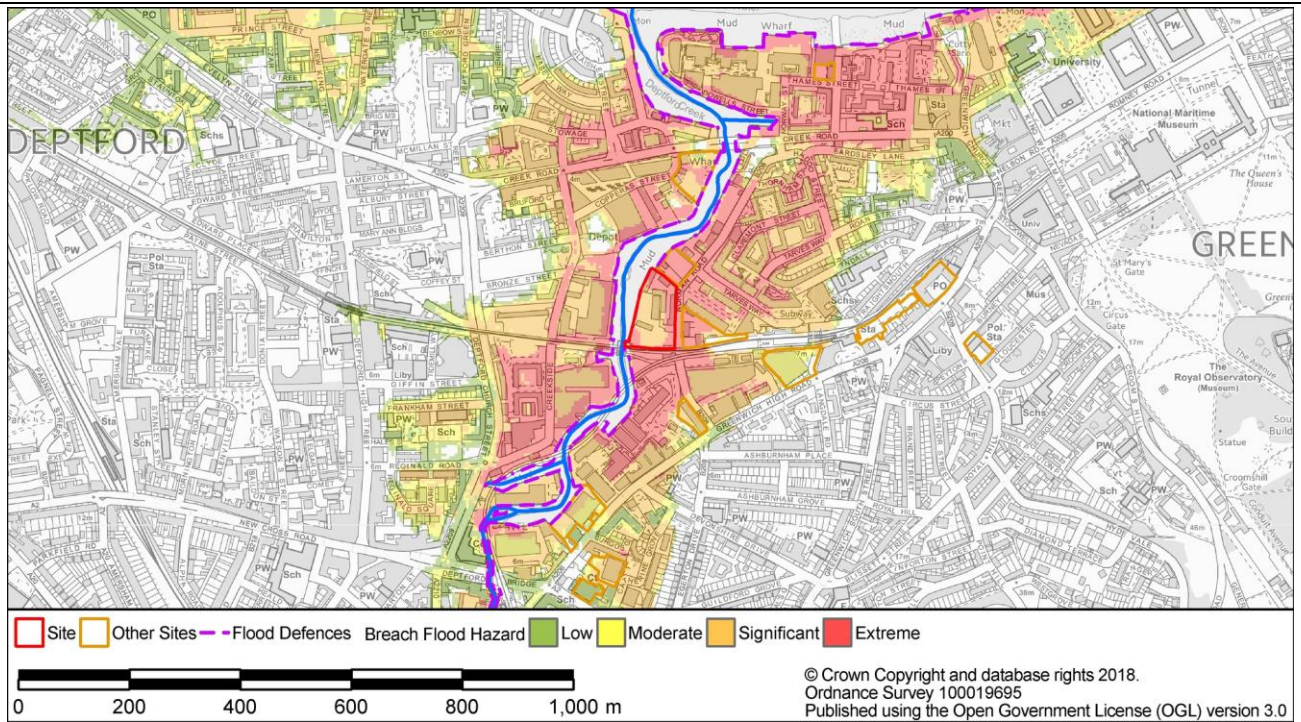
<b>Flood Defence Source:</b>	tidal	<b>Upstream of Thames Barrier?</b>	Yes
<b>Flood Defence Type:</b>	wall	<b>Standard of Protection:</b>	1000
<b>Flood Warning Area</b>	Tidal Thames from Woolwich Arsenal to Deptford Creek (100% Overlap), Ravensbourne at Deptford (15% Overlap)	<b>Emergency Rest Centre</b>	Greenwich West Community and Arts Centre

**Residual Tidal Flood Risk**

**Site Name: Brookmarsh Industrial Estate & Phoenix Wharf, Lower Norman Road**



**Figure B - Maximum Flood Depth (Upriver Breach Assessment, MLWL 2100)**



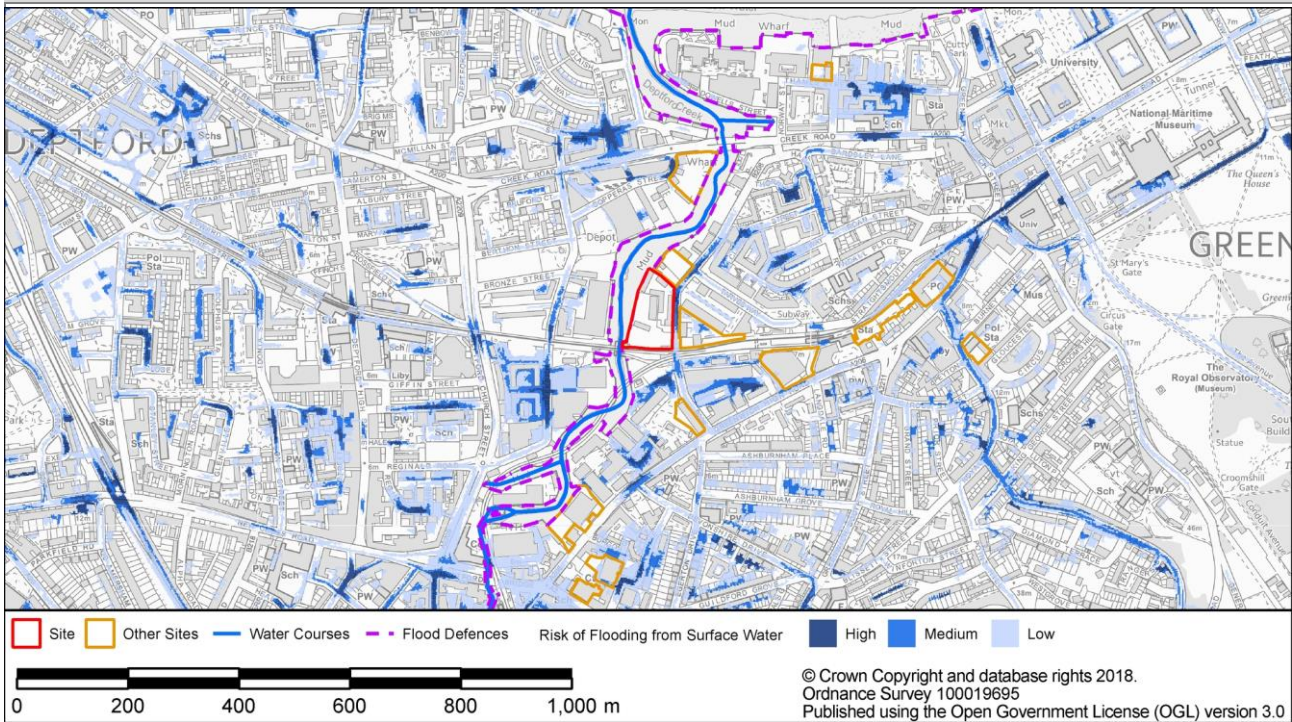
**Figure C - Maximum Flood Hazard (Upriver Breach Assessment, MLWL 2100)**

**Surface Water Source**

**Risk of Flooding from Surface Water (RoFSW)**

Medium

**Site Name: Brookmarsh Industrial Estate & Phoenix Wharf, Lower Norman Road**



**Figure D Risk of Flooding from Surface Water (RoFSW)**

<b>Critical Drainage Area</b>	N/A		
<b>Groundwater Source</b>			
<b>Bedrock Geology</b>	Lambeth Group, Thanet Sand Formation	<b>Superficial Geology</b>	Alluvium - Clay, Silty, Peaty, Sandy
<b>Bedrock Aquifer Designation</b>	Secondary A (100% Overlap)	<b>Superficial Aquifer Designation</b>	Secondary (undifferentiated) (100% Overlap)
<b>Potential Groundwater Flooding Zone</b>	Zone A		
<b>Other Sources</b>			
<b>Sewer Flooding (within 4 digit postcode)</b>	Internal Flood Incidents: 3	External Flood Incidents: 0	
<b>Artificial sources</b>			

**Site Specific Recommendations**

The site is located within Flood Zone 3 but is in an area that benefits from the Thames Tidal defences and is at residual risk of tidal flooding. Less Vulnerable uses may be located at ground level. Basements are not permitted on the site. The ROFSW map shows that site and surrounding area is at medium risk of surface water flooding. An assessment of the local surface water flow paths should be made during the development of the site design. Buildings and other more vulnerable aspects of the development should be placed away from those areas at risk of surface water ponding. Permission is required from the Environment Agency for work activity within 16m of a tidal river or tidal defence.

Less Vulnerable developments can be designed to be floodable instead of raising floor levels. This may be beneficial to help minimise the impact of the development on the displacement of floodwater and the risk of flooding to the surrounding area. A number of flood resistance and resilience measures can be implemented into new developments to mitigate potential flooding. Guidance on resilience measures can be found in the document 'Improving the Flood Performance of New Buildings, Flood Resilient Construction' published by The Department for Communities and Local Government (CLG).

Potential overland flow paths from surface water should be determined and appropriate solutions proposed to minimise the impact of the development, whilst ensuring that flows are not diverted towards other properties elsewhere. Developers should consider using design for exceedance approaches by using urban areas and infrastructure to help manage local flooding. Flow paths should be assessed to inform the strategic location of SuDS and techniques to route flows around the edge of buildings. Careful consideration should be given to the use of fences and landscaping walls so as to prevent causing obstruction to flow routes.

Unobstructed safe access routes to and from the development should be provided. These should provide access to higher ground that is not at risk from tidal flooding. It is strongly recommended that permanent internal access to upper floors is provided for all users of the site to provide safe refuge in a flood event. In the event of a breach in defences there is potential that dry routes to a safe location may be limited. The local area is covered by the 'Tidal Thames from Woolwich Arsenal to Deptford Creek' Environment Agency Flood Warning Area. A Flood Warning and Evacuation Plan (FWEP) must be prepared for the site, detailing how flood warning will be provided as well as how the safety of occupants and access to/from the development will be ensured. Further details of what should be included can be found in the Developer Guidance.

Reference to the SWMP Appendix D Figure D6 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is uncertain and unsuitable for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Development should utilise sustainable urban drainage systems (SuDS) unless there are practical reasons for not doing so. Where an increased risk of surface water flooding exists to surrounding sites, developers need to provide a Drainage Strategy to demonstrate how they intend to address this, by what methods, over what timeframe and how maintenance of such works would be funded over its lifetime. This should include a consideration of SuDS in line with the London Plan 5.13 and Local Plan Policies. Surface water run-off should be managed in line with

**Site Name: Brookmarsh Industrial Estate & Phoenix Wharf, Lower Norman Road**

Royal Greenwich's surface water management requirements, as set out in Chapter 4 of the Developer Guidance.

**Summary**

Site is in Flood Zone 3, defended by Thames tidal defence, at residual risk of tidal flooding. It also has a medium surface water flood risk. More Vulnerable uses must be located on the first floor or above, with Less Vulnerable uses at ground level. Tidal flood risk mitigation measures should be implemented into the site design to manage flood risk. It is recommended that effective surface water management measures are implemented, including careful site and building layout and the incorporation of SuDS, in order to reduce flooding both on the site and routing of flood water to other areas. Due to the extent of flood risk on the site, a flood warning and evacuation plan should be implemented to ensure access to and from the site. On this basis, it is likely that this site could pass the Exception Test.