

# **Appendix 2: Replacement Appendices to the October 2021 ES**

**Cumulative Scheme List and Map  
Revised Archaeological Desk Based Assessment and Geoarchaeological Assessment  
Flood Risk Assessment and Drainage Strategy**



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## New Aberfeldy Masterplan Flood Risk Assessment

Job No: 2272

Date: 07<sup>th</sup> April 2022

Revision: 1.4

Project name	New Aberfeldy Masterplan	Job Number
Report Name	Flood Risk Assessment	2272

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1.1	08/10/2021	Issued for Planning Approval
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Revision	Issue Date	Purpose of issue / description of revision / version			
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## 1 Introduction

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### 1.1 Purpose of Report

Parmarbrook has been instructed by Aberfeldy New Village LLP (joint venture between EcoWorld London and Poplar HARCA) to prepare a Flood Risk Assessment (FRA) in support of a hybrid planning application for the New Aberfeldy Masterplan.

The scope of this report is limited to an assessment of flood risk at the site and the measures required to appropriately mitigate flood risk for the lifetime of the development, taking into consideration the vulnerability of the proposed use to flood risk. A preliminary surface water drainage scheme is reported separately.

The FRA has been updated for the inclusion of Jolly's Green within the application boundary.

### 1.2 Information Source

The assessment has been undertaken in accordance with the below documents and guidance detailed within the National Planning Policy Framework (NPPF) and the accompanying Planning Practice Guidance (PPG).

- Ordnance Survey (OS);
- British Geological Survey (BGS);
- Environment Agency (EA);
- Department for Environment, Food and Rural Affairs (DEFRA);
- Thames Water Sewer Records;
- National Planning Policy Framework, July 2021
- National Planning Practice Guidance (NPPG) August 2021
- Policy SI 12 Flood Risk Management, The London Plan 2021
- Policy SI 13 Sustainable Drainage, The London Plan 2021
- London Borough of Tower Hamlets Local Plan 2020
- London Borough of Tower Hamlets Strategic Flood Risk Assessments
- London Borough of Tower Hamlets Preliminary Flood Risk Assessment
- London Borough of Tower Hamlets Local Flood Risk Management Strategy
- London Borough of Tower Hamlets Surface Water Management Plan

It is to be noted that this FRA has been undertaken as a desktop study and no intrusive site investigations have been undertaken to inform this report.

## 2 Planning Policy and Guidance

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### 2.1 National Planning Policy Framework

The thrust of national planning policy, as articulated in the NPPF is that inappropriate development in areas at risk of flooding should be avoided where possible, as summarised below:

- Inappropriate development in areas at risk of flooding should be avoided and that development should be directed away from areas at highest risk (whether existing or future), but where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere (NPPF para. 159).
- The policy of seeking to steer development to areas with the lowest risk of flooding, from any source, is implemented through the application of the flood risk sequential test. Development should not be allocated or permitted if there are reasonably available sites, appropriate for the proposed development in areas with a lower risk of flooding. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding (NPPF para. 162).
- If it is not possible for development to be located in zones with a lower risk of flooding (taking into account wider sustainable development objectives) the exception test may have to be applied. The need for the test will depend on the potential vulnerability of the site and of the vulnerability of the development proposed (as set out in Annex 3 of NPPF; also PPG Table 2 and Table 3) (NPPF para. 163). For example, the exception test need not be applied for less vulnerable development in any flood zone, or for more vulnerable development in flood zones 1 or 2.
- Where the exception test must be applied, application of the test for development proposals at the application stage should be informed by a site-specific flood risk assessment. For the test to be passed it should be demonstrated that: (a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; (b) and the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall (NPPF para. 164). Both elements of the test should be satisfied for the development to be permitted (NPPF para. 165).
- A site-specific flood risk assessment should be provided for all development in flood zones 2 and 3 [whilst] in flood zone 1, an assessment should accompany all proposals involving: sites of 1 ha or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use (NPPF para. 167).
- Development should not increase flood risk elsewhere (NPPF para. 167).
- Development should only be allowed in areas at risk of flooding where the flood risk assessment (and the sequential and exception tests, as required), demonstrate that: a) within the site, the most vulnerable development is located in areas of lowest flood risk (unless there are overriding reasons to prefer a different location); b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment; c) the development incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate; d) any residual (flood) risk can be safely managed; and e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan (NPPF para.167).

- Applications for some minor development and changes of use should not be subject to the sequential or exception tests (NPPF para. 168). The exceptions are stated in Footnote 56.
- Major development should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The systems should: a) take account of advice from the lead local flood authority; b) have appropriate proposed minimum operational standards; c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and d) where possible, provide multifunctional benefits (NPPF para. 169).

## 2.2 The London Plan 2021: Policies SI 12 & SI 13

The London Plan 2021 provides an overall strategic plan for the Mayor of London, 32 London boroughs and the City of London Corporation. The plan sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20 – 25 years.

Policies SI 12 and SI 13 are related to improving water quality, flood mitigation and reducing flood risk through sustainable urban drainage systems.

**Policy SI 12 (Flood Risk Management)** states that:

- A. Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers.
- B. Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.
- C. Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.
- D. Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan. The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.
- E. Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.

**Policy SI 13 (Sustainable Drainage)** states that:

- A. Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. Increases in surface water run-off outside these areas also need to be identified and addressed.
- B. Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

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- B. Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

- 1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
  - 2) rainwater infiltration to ground at or close to source
  - 3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens).
  - 4) rainwater discharge direct to a watercourse (unless not appropriate)
  - 5) controlled rainwater discharge to a surface water sewer or drain
  - 6) controlled rainwater discharge to a combined sewer.
- C. Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.
  - D. Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

## 2.3 London Borough of Tower Hamlets Local Plan 2031

The Local Plan was adopted in January 2020, it sets out how the borough of Tower Hamlets will grow and develop until 2031 and identifies how many new homes, jobs and services are needed to support our growing population, and where and how they should be provided. It will also shape how our places will look and feel and influence the way that our communities interact with each other and the spaces around them. It also provides a series of policies to ensure development is well-designed, accessible, safe and respects and enhances the environment, and can be delivered alongside new infrastructure and local services.

**Policy D.ES4 (Flood Risk)** states that:

1. Development is required to be located in areas suitable for the vulnerability level of the proposed uses with:
  - a. highly vulnerable uses not allowed within flood zone 3a
  - b. essential infrastructure and more vulnerable uses within flood zone 3a required to pass the exception test, and
  - c. highly vulnerable uses within flood zone 2 required to pass the exception test.
2. Development is required to provide a flood risk assessment if it meets any of the following criteria:
  - a. The development site is over 1 hectare in size within flood zone 1
  - b. The site is within flood zones 2 or 3a
  - c. The development may be subject to other sources of flooding, as defined in the Tower Hamlets Strategic Flood Risk Assessment.
3. The flood risk assessment should include:
  - a. A sequential test if the development is in flood zone 2 or 3
  - b. The risks of both on and off-site flooding to and from the development for all sources of flooding including fluvial, tidal, surface run-off, groundwater, ordinary watercourse, sewer and reservoir
  - c. An assessment of tidal risk in the event of a breach in the River Thames defences
  - d. The impact of climate change using the latest government guidance
  - e. Demonstration of safe access and egress, and
  - f. Mitigation measures, taking account of the advice and recommendations set out in the Tower Hamlets Strategic Flood Risk Assessment.
4. Site design of development which meets criteria outlined in Part 2 above is required to:

- a. undertake a sequential approach to development layout to direct highest vulnerability uses to areas of the site with lowest flood risk, and
  - b. incorporate flood resilience and/or resistance measures.
5. Development is required to protect and where possible increase the capacity of existing water spaces and flood storage areas to retain water.
6. Development is required to enable effective flood risk management through:
- a. requiring development along the River Thames and the River Lea and its tributaries to be set back by the following distances unless significant constraints are evidenced:
    - i. A minimum of a 16-metre buffer strip along a tidal river, and
    - ii. A minimum of a 8-metre buffer strip along a fluvial river.
  - b. optimising opportunities to realign or set back defences and improve the riverside frontage to provide amenity space and environmental enhancement.

Policy D.ES5 (Sustainable Drainage) states that:

1. Development is required to reduce the risk of surface water flooding, through demonstrating how it reduces the amount of water run-off and discharge from the site through the use of appropriate water reuse and sustainable drainage systems techniques.
2. Major development is required to submit a drainage strategy which should demonstrate that surface water will be controlled as near to its source as possible in line with the sustainable drainage systems hierarchy.
3. Development is required to achieve the following run-off rates:
  - a. New development in critical drainage areas is required to achieve a greenfield run-off rate and volume leaving the site
  - b. All other development should seek to achieve greenfield runoff rate and volume leaving the site. Where this is not possible, the minimum expectation is to achieve at least 50% attenuation of the site's surface water run-off at peak times prior to redevelopment.

## 2.4 London Borough of Tower Hamlets Strategic Flood Risk Assessments

The LBTH Strategic Flood Risk Assessment was published in August 2017 to determine flood risk across the borough.

The Level 1 SFRA aims to collate and review all information available regarding flood risk for the borough, to enable the Sequential Test to be undertaken. In addition, it identifies areas at risk of flooding from all sources and provides information to allow the LBTH to set suitable policies to address flood risk management.

The Level 2 SFRA allows the Exception Test to be undertaken for Sites which cannot be located within a lower flood risk area. This report also provides enough information to assist each borough with strategic planning for their administrative area.

Information from both SFRA's regarding tidal, fluvial, surface water, sewer and groundwater flooding is included within Section 2 of this FRA.

## 2.5 London Borough of Tower Hamlets Preliminary Flood Risk Assessment

The LBTH's Preliminary Flood Risk Assessment (PFRA) was published in May 2011, to provide a high-level summary of flood risk to the borough.

The report describes the probability and subsequent consequences of past and future flooding, and considers flooding from overland surface water runoff, groundwater, sewers and ordinary watercourses. Information from the PFRA regarding flooding is included within Section 2 of this FRA.

## 2.6 London Borough of Tower Hamlets Local Flood Risk Management Strategy

The LBTH Local Flood Risk Management Strategy (LFRMS)<sup>xii</sup> was published in June 2015, to provide guidance and information for residents, businesses and developers regarding Tower Hamlets strategy for dealing with flooding within the borough.

It was completed to fulfil LBTH's requirement and duties as Lead Local Flood Authority (LLFA) and sets out how LBTH plan to manage flood risk across the Borough. In general, the LFRMS describes LBTH's commitment to work to address local flood risk and provides a framework of how local flood risk will be managed.

## 2.7 Environmental Permitting and Land Drainage Consent

Under the Environmental Permitting (England and Wales) Regulations 2016 an Environmental Permit for Flood Risk Activities is required from the Environment Agency for any permanent or temporary works, including works:

- In, over or under a designated main river
- Within 8 m of the top of bank of a designated main river or of the landward toe of a flood defence (16 m if it is a tidal main river or a sea defence).

In addition, any permanent or temporary works within the floodplain of a designated main river may also require an Environmental Permit for Flood Risk Activities. A permit is separate to and in addition to any planning permission granted.

Land drainage consent may be required from the lead local flood authority or drainage board for work to an ordinary watercourse.

Undertaking activities controlled by local byelaws also requires the relevant consent.

### 3 Site Description & Context

#### 3.1 Site Location

The Aberfeldy estate is located in Lansbury ward in the south-east of Tower Hamlets. Aberfeldy is one of the most physically and geographically segregated parts of the borough, with the A12 and A13 road networks splitting the estate from the rest of Poplar and Blackwall.

The site is located to the south of the River Lea and the Leven Yard Gasworks site. It is bounded to its west by the A12 and borders the Aberfeldy Village Development and Culloden Primary School to the south.

The site is centred on the approximate National Grid Reference TQ 38483 81132, as shown in Figure 1.

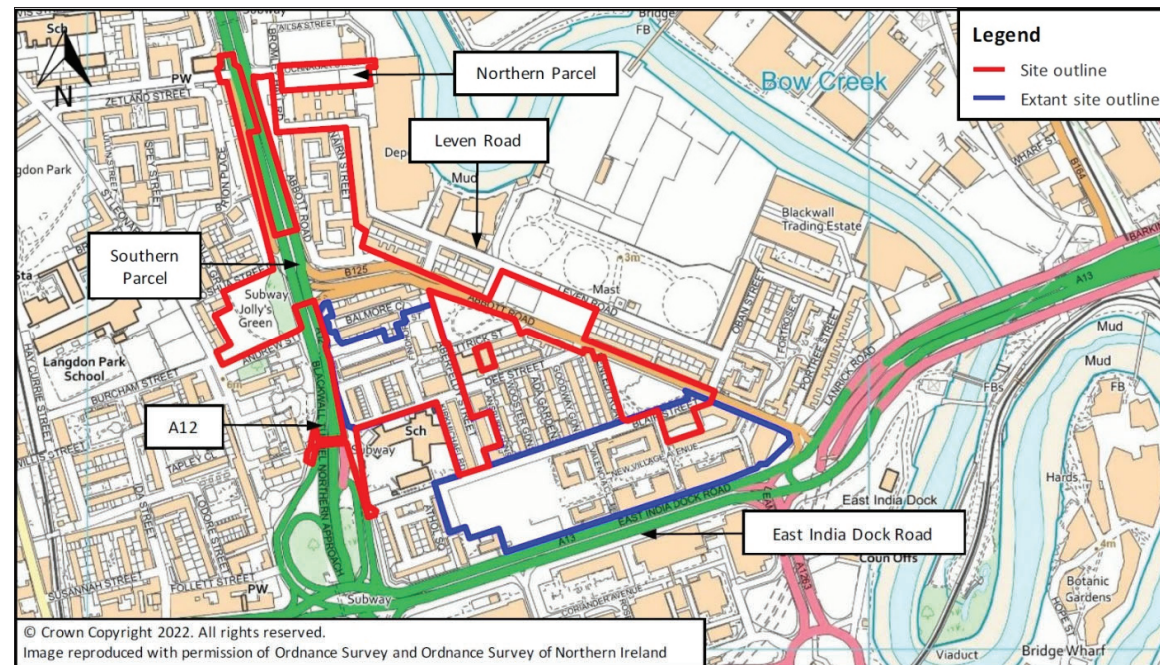


Figure 1 - Site Location

#### 3.2 Existing and Proposed Development

The existing site includes:

- Existing homes on the Aberfeldy estate, including the properties and land around Balmore Close
- The Nairn Street Estate to the north and the new Poplar Works development adjacent to the A12.
- Land at Lochnagar Street to the north of Bromley Hall School
- Abbott Road and the existing green spaces or Braithwaite Park and Leven Road Open Space
- Land along Blair Street, adjacent to Braithwaite Park, which will complete the courtyard building within the built phase of Aberfeldy Village; and
- The existing vehicular underpass, Jollys Green, land parallel to the A12 and the pedestrian underpass at Dee Street.

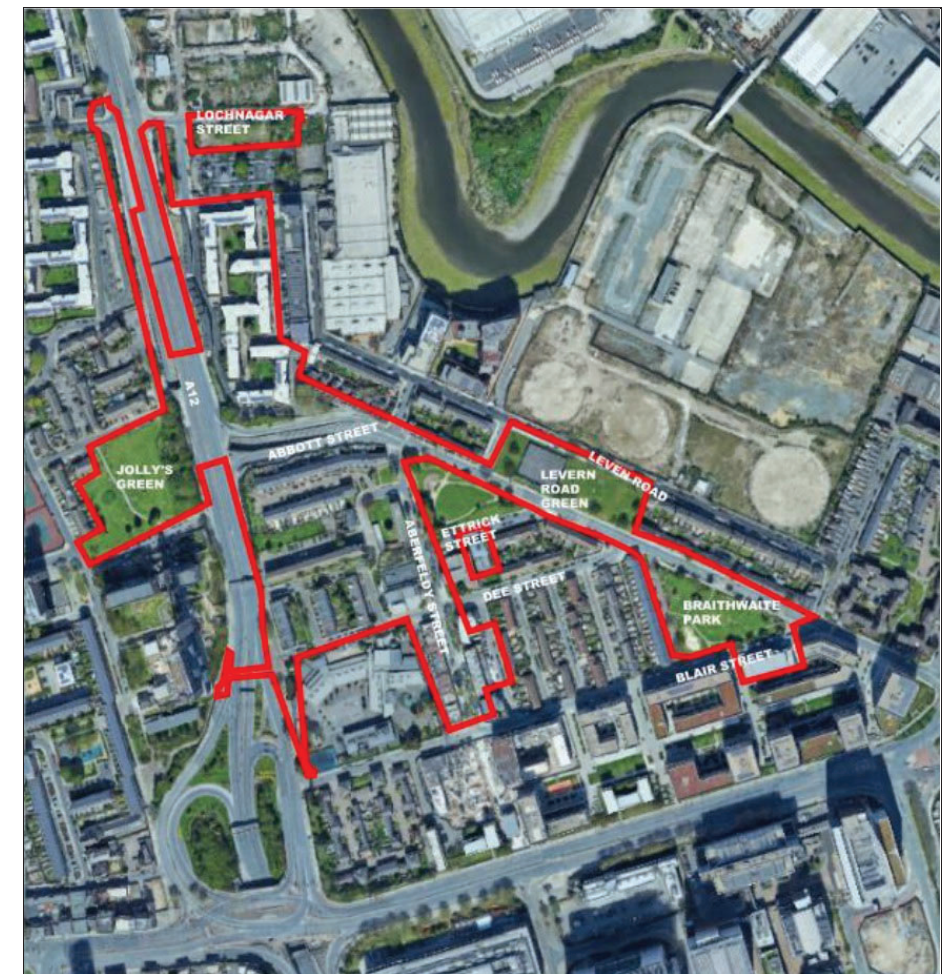


Figure 2 - Site Aerial View

A portion of the site benefits from an extant outline planning permission (ref: PA/11/02716/PO) for the construction of 1,176 residential units, of which 901 will have been constructed following completion of phase 3.

The proposed new masterplan is a once in a generation opportunity to reshape the heart of Poplar by maximising the LLP, Poplar HARCA and Tower Hamlets' landholdings which will deliver:

- A neighbourhood that fosters growth through high quality mixed use redevelopment
- A revitalised local centre with new retail, commercial workspace, civic and faith facilities
- Considerable public realm focused on walkability, healthy streets and creating a child friendly place
- Opportunity for improved connectivity to, from and through the site
- A significant number of new high quality homes providing a significant contribution to LBTH housing targets.

The proposals comprise a hybrid planning application seeking detailed permission for Phase A and outline planning permission for future phases.

The outline scheme comprises the demolition of all existing structures and redevelopment to include buildings up to 100 metres in height (illustratively 28 storeys) and up to 141,014sq.m. of floorspace comprising a maximum of 133,971sq.m. of residential uses; retail use, workspaces; car and cycle parking; a new pedestrian route through the repurposing of the Abbott Road vehicular underpass for pedestrians/cyclists; landscaping, open spaces, public realm, access, infrastructure and highways works.

The detailed scheme comprises the construction of buildings 5-11 storeys in height to provide 277 residential units, retail uses and a temporary marketing suite, access, car and cycle parking, landscaping, public realm, and improvements to Braithwaite Park and Leven Road Open Space.

The NPPG classifies residential development as More vulnerable to flood risk, and commercial and retail development as Less Vulnerable to flood risk.

Refer to **Appendix A** for the illustrative Aberfeldy New Masterplan Layout.

### 3.3 Waterbodies in the Vicinity of the Site

Waterbodies in the vicinity of the site are identified in **Figure 3**.

The River Lee is located a minimum of approximately 160 m east of the site and flows in a generally southerly direction to its confluence with the River Thames. The River Thames is located approximately a 550 m south of the site and flows in an easterly direction towards the Thames Estuary.

According to the main river map both the River Lee and the River Thames are classified as a 'main river'. The Environment Agency carries out maintenance, improvement and construction work on main rivers to manage flood risk.

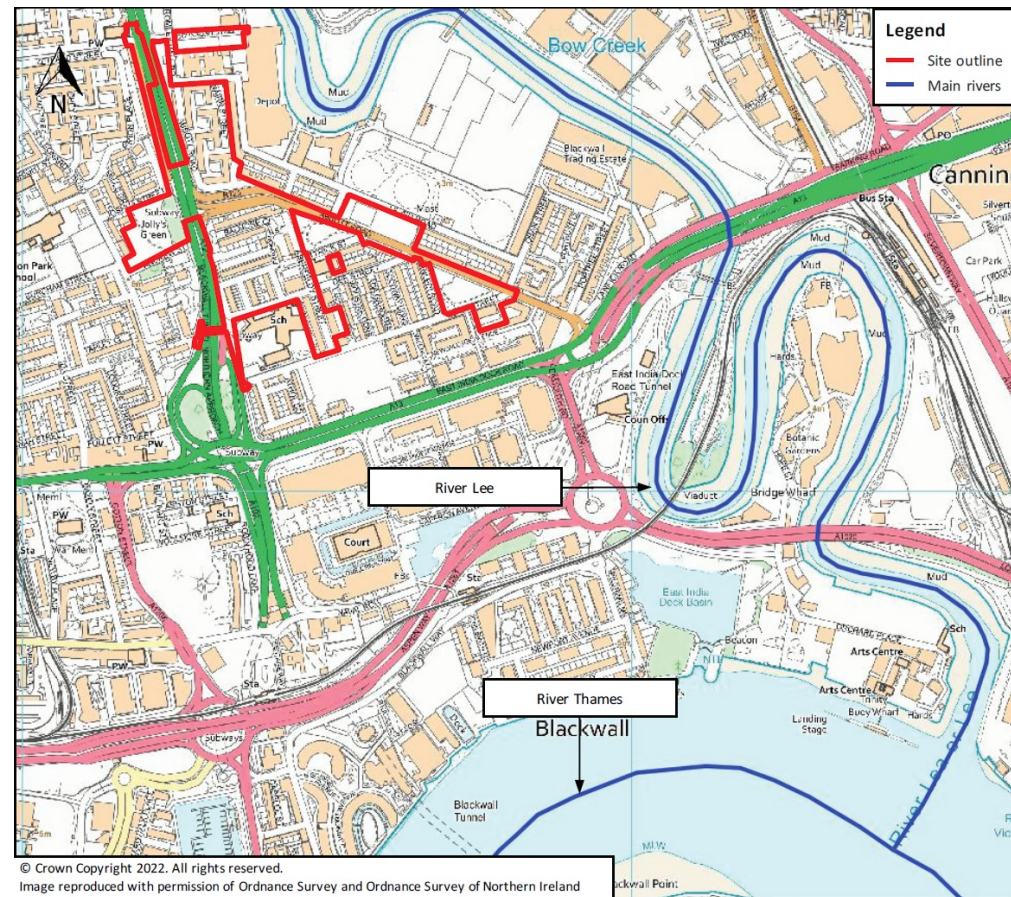


Figure 3 – Location and Designation of Waterbodies

### 3.4 Site Levels and Topography

The existing site levels have been extracted from the Lidar Digital Terrain Model (DTM) provided by the Department for Environment, Food & Rural Affairs (DEFRA) Survey Data portal. The maps identify the existing levels to Ordnance datum as illustrated in **Figure 4**.

The DTM indicates that the site levels range between approximately 1.4 and 5.3 metres Above Ordnance Datum (m AOD), with the northern site parcel situated approximately 2.0 m higher than the southern parcel.

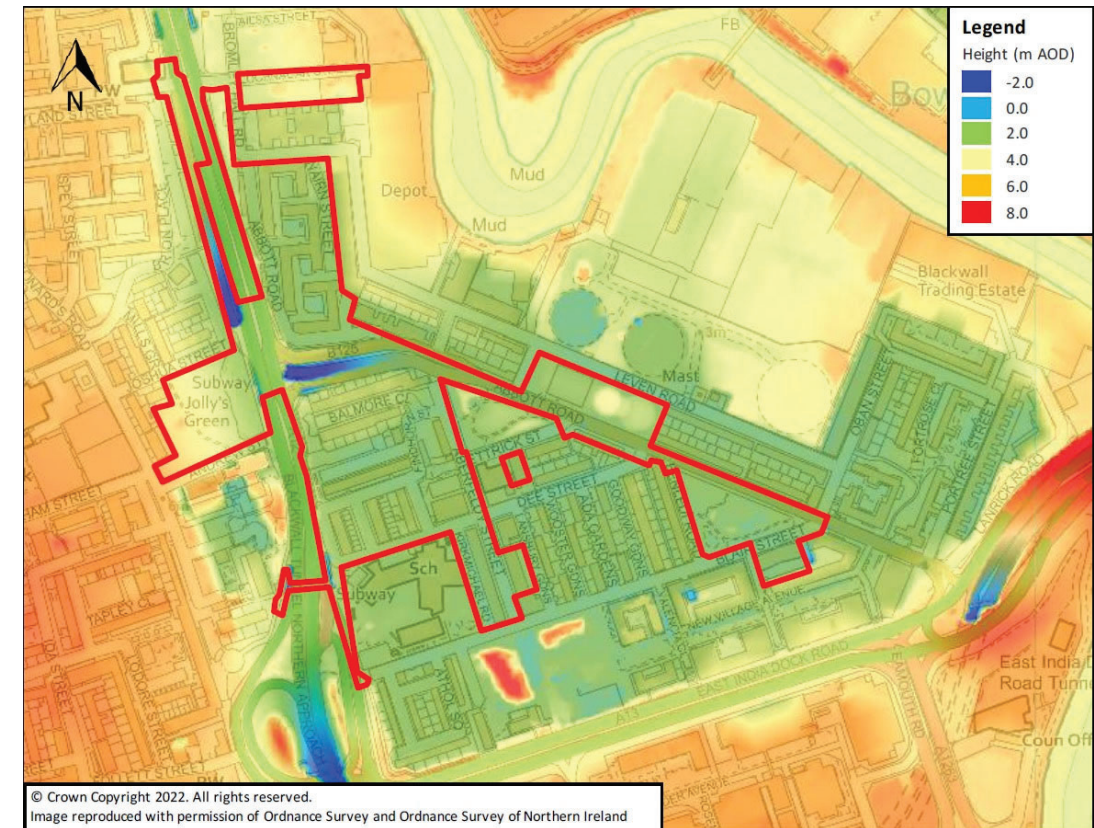


Figure 4 – Lidar level data

### 3.5 Site Geology and Hydrogeology

British Geological Survey (BGS) mapping indicates that the superficial deposits at the majority of the site comprise alluvium - clay, silt, sand and peat formed up to 2 million years ago in the Quaternary Period. In the western area Sands and Gravels of the Kempton Gravel Member appear at shallow depths. (**Figure 5**).

The bedrock geology at the site comprises clay, silt and sand of the London Clay formation - sedimentary bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period (**Figure 6**).

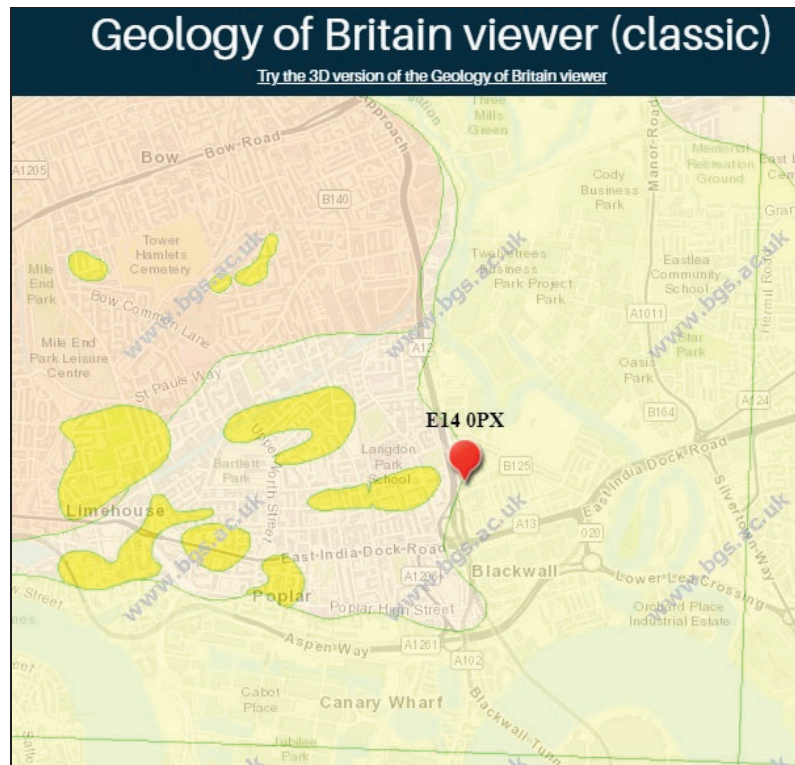


Figure 5 - Site Superficial deposits

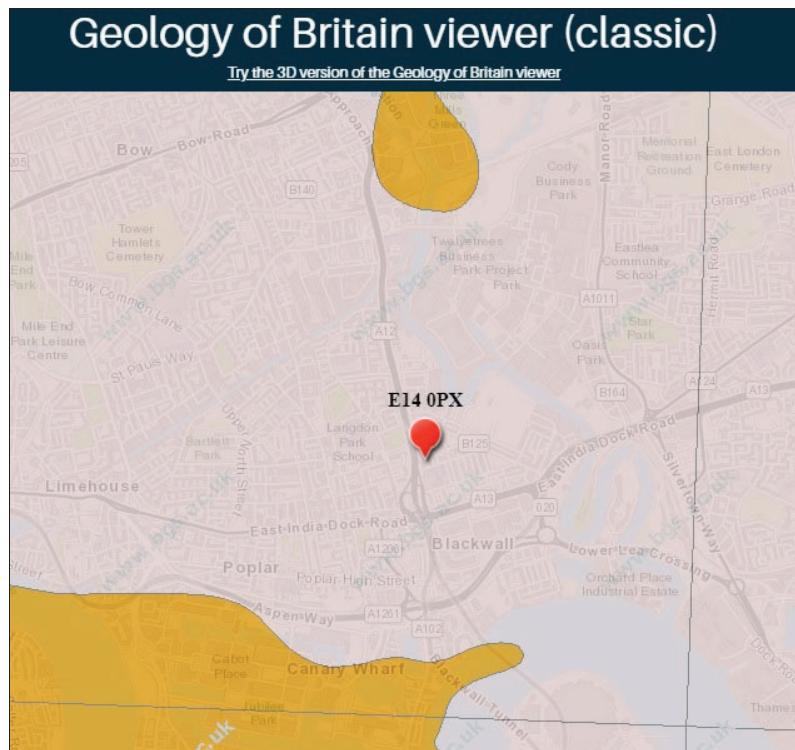


Figure 6 - Site Bedrock Geology

The National Geoscience Data Centre's Single Onshore Borehole Index holds five records of boreholes within the site boundary. These indicate that made ground is present to a maximum depth of 2.5 m below ground level (bgl) underlain by silty sandy clay interlaid with gravel to a depth of 25.0 m bgl.

Refer to **Appendix B** for the BGS Historic borehole logs.

The EA provides publicly available mapping which indicates the aquifer classifications and groundwater vulnerability of geological deposits of England and Wales.

Aquifer designations reflect the importance of aquifers in terms of groundwater as a resource and in their role in supporting surface water flows and wetland ecosystems. Aquifer maps are split into two different types of aquifer designations; superficial, which are permeable unconsolidated deposits and bedrock which are solid, permeable formations.

Environment Agency (EA) records indicate that the Sands and Gravels of the Kempton Gravel Member are considered a Secondary A Aquifer. Alluvium deposits are considered a Secondary Aquifer (undifferentiated) (Figure 7).

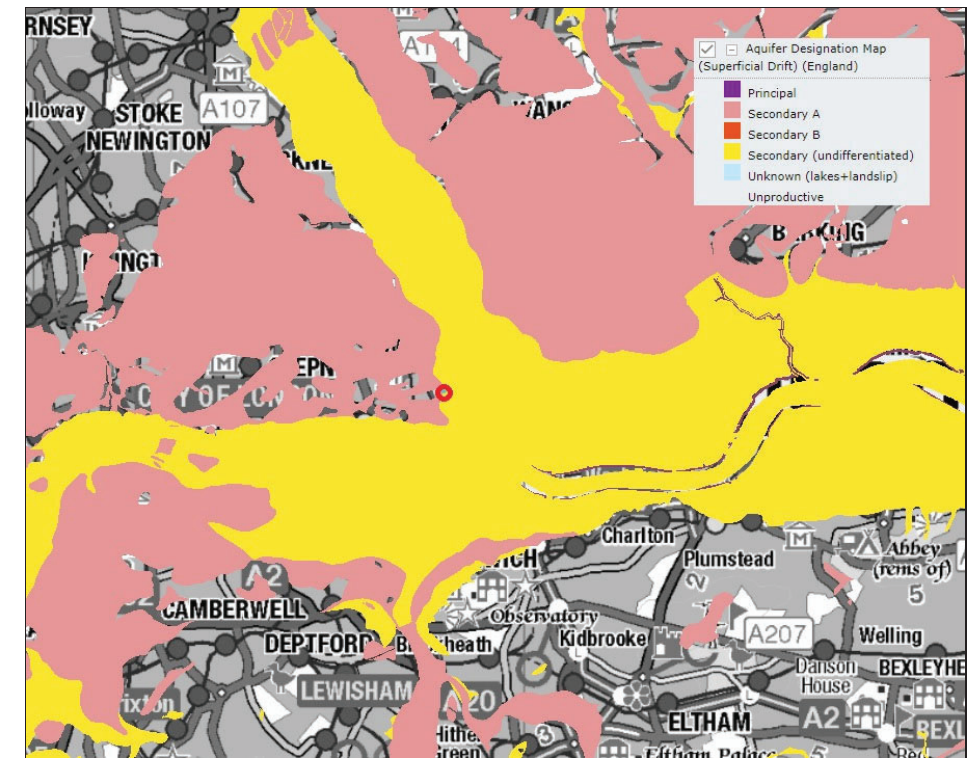


Figure 7 – Environment Agency Aquifer Designation Map (Superficial)

The London Clay in the bedrock is considered an Unproductive strata (Figure 8).



Figure 8 – Environment Agency Aquifer Designation Map (Bedrock)

Therefore, the Groundwater Vulnerability Zone is considered to be Medium-Low. (Figure 9).

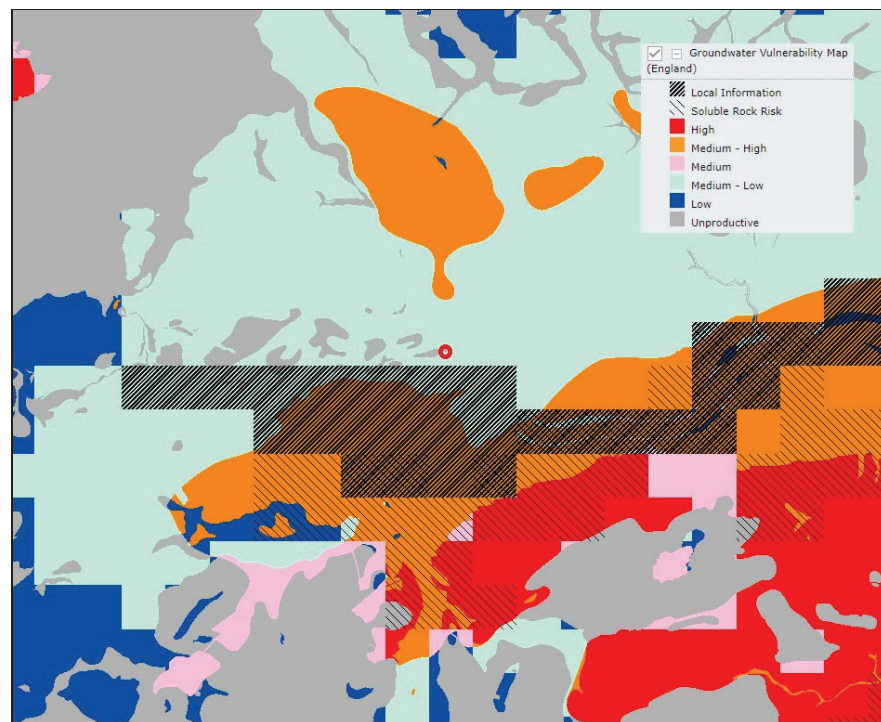


Figure 9 – Environment Agency Groundwater Vulnerability Map

According to the Soilscape maps produced by the National Soils Research Institute, soil conditions at the western area of the site are described as 'Loamy soils with naturally high groundwater'. In the central and eastern areas they are indicated as 'Loamy and clayey soils of coastal flats with naturally high groundwater' (Figure 10).

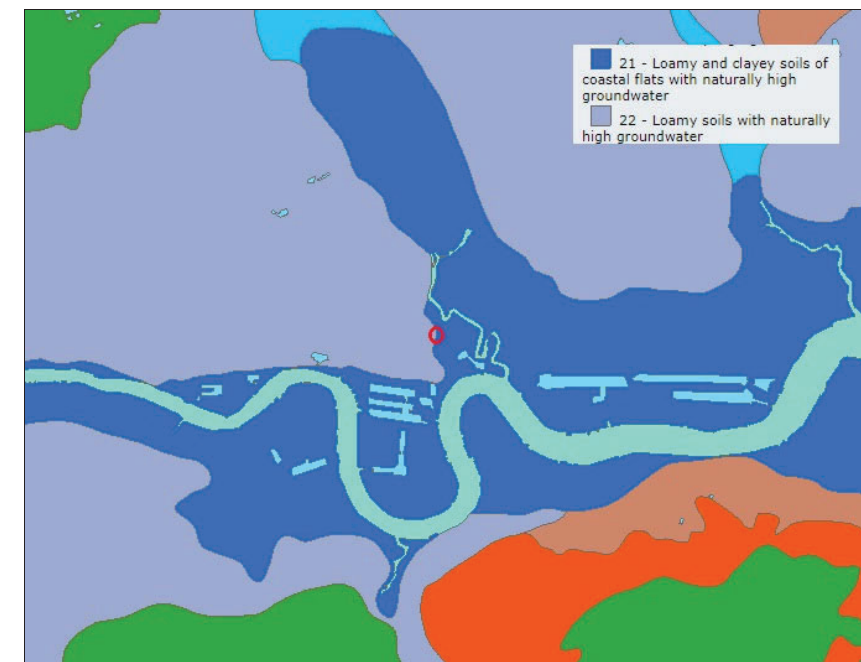


Figure 10 – Soilscape (England) Map

EA define Source Protection Zones (SPZs) for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk.

The SPZ map in the area shows that the site is not located within a catchment, outer or inner designated source protection zones (Figure 11).

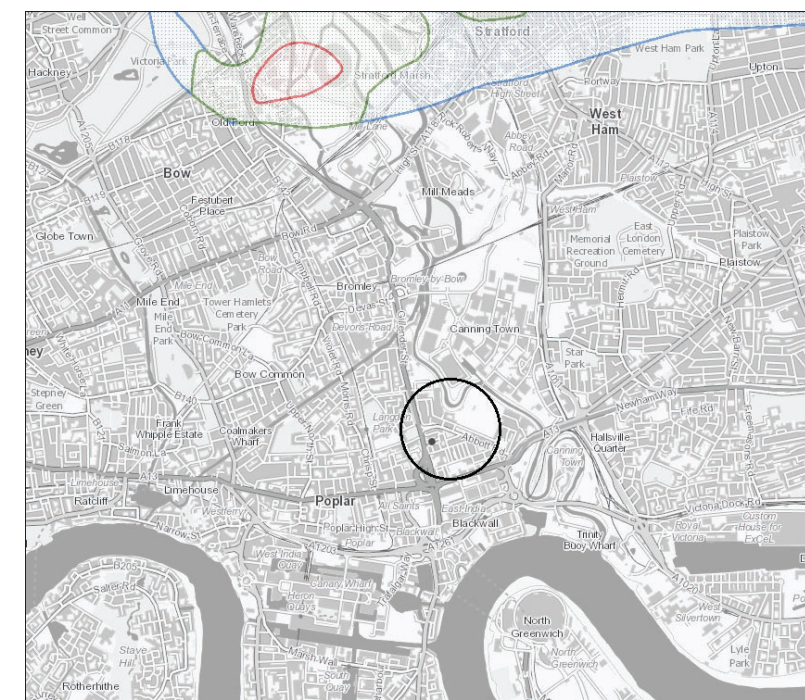


Figure 11 – Environment Agency Source Protection Zones Map

## 4 Assessment of Flood Risk

### 4.1 Flood Zone Designation

Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. The NPPF and PPG defines Flood Zones as follows:

- Flood Zone 1 (Low Probability): Land having a less than 1 in 1,000 annual probability of river or sea flooding.
- Flood Zone 2 (Medium Probability): Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
- Flood Zone 3a (High Probability) Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
- Flood Zone 3b (The Functional Floodplain): This zone comprises land where water has to flow or be stored in times of flood.

The flood zones are shown on the Environment Agency Flood Map for Planning (Rivers and Sea). The flood zones shown on the flood map are defined by the predicted extent of flooding during the present day 1 in 100 (non-tidal rivers), 1 in 200 (tidal rivers and sea) and 1 in 1,000 (rivers and sea) annual exceedance probability (AEP) events. The zones do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

Flood zone 3b (functional floodplain) is not separately distinguished on the Flood Map for Planning but is usually identified by local planning authorities in their SFRA. The boundary of flood zone 3b is normally defined as land that would flood during the present day 1 in 20 AEP event, although definitions may vary particularly in some districts and in urban areas.

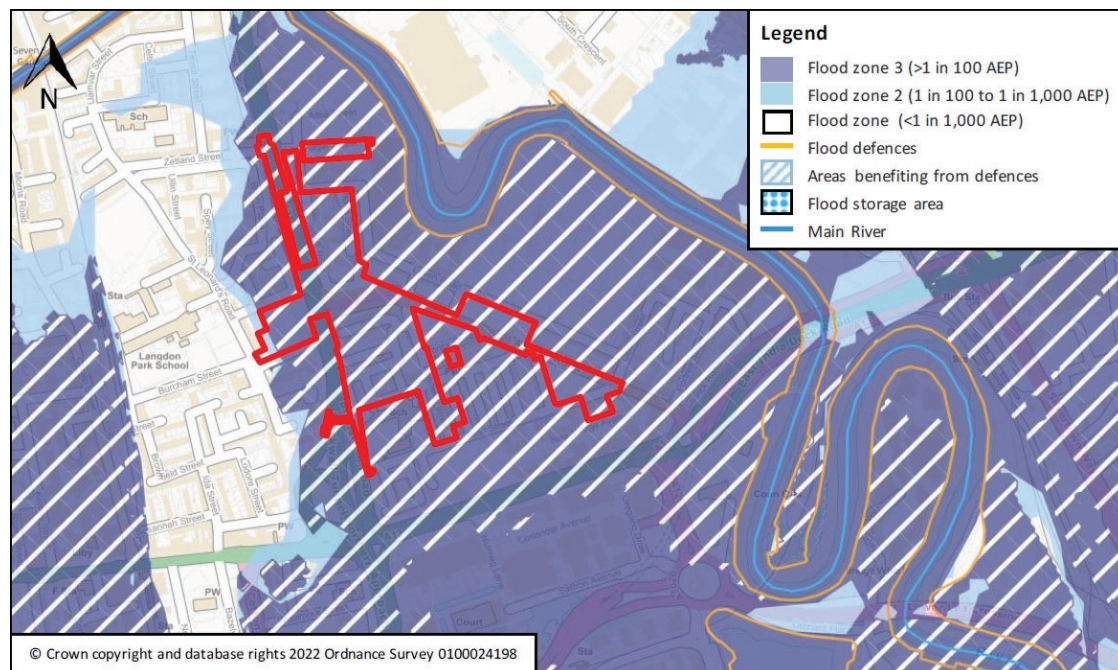


Figure 12 – EA Flood Map from Rivers & Sea

Where an area benefits from formal flood defences providing a minimum standard of protection, the defended area may be indicated as an area benefiting from flood defences. However, not all areas are shown as such, and unless specifically indicated, the Flood Map for Planning conservatively shows land at risk of flooding in the absence of flood defences. The Flood Map for Planning (Figure 12) indicates the site to be located in flood zone 3 and is in an area benefiting from the presence of flood defences.

### 4.2 Historical Records of Flooding

The Environment Agency historic flood map indicates that extensive flooding of the site occurred in 1928 and that land beyond the south-east corner of the site was also flooded in 1947 (Figure 13).

It should be noted that raised defences were not present along the River Lee when flooding occurred at the site. The London Borough of Tower Hamlets SFRA indicates that flood defences were constructed following the 1947 flood event.

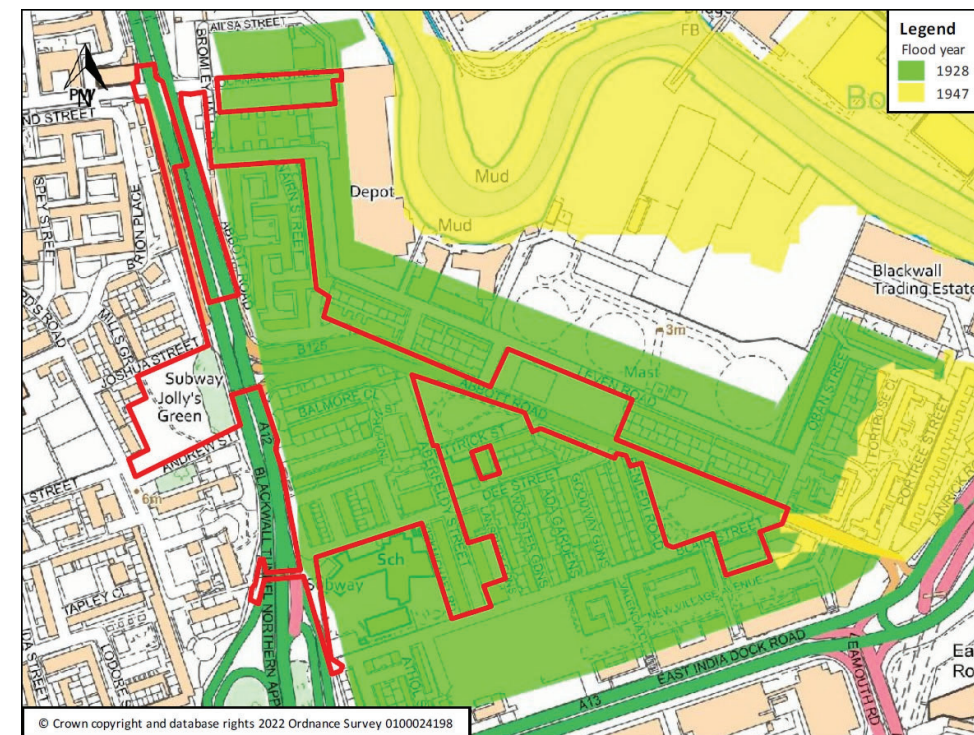


Figure 13 – Recorded Flood Outlines.

### 4.3 Flood Risk – River Lee

As detailed in Section 3.3, the River Lee is located a minimum of approximately 160 m east of the site and flows in a generally southerly direction to its confluence with the River Thames.

The Environment Agency (EA) has confirmed that the flood defences along the River Lee prevent flooding in up to the 1 in 1,000 AEP event and that the planning application should be informed by an assessment of flood risk from the River Thames. Refer to Appendix C for the Product 4 Detailed Flood Risk Maps provided by the EA.

#### 4.4 Flood Risk – River Thames

As detailed in Section 3.3, the River Thames is located approximately a 550 m south of the site and flows in an easterly direction towards the Thames Estuary.

The extent of flooding presented by the Flood Map for Planning does not take into account the presence of flood defences. However, the site is located in an area benefitting from formal defences, including the Thames Barrier.

The Thames Barrier and the raised defences along the banks of the River Thames and are designed to provide a 1 in 1,000 annual probability Standard of Protection (SoP) and therefore mitigate the risk of flooding from the River Thames in up to the present day 1 in 1,000 annual probability event.

The crest level of the defences situated adjacent to the site is currently 5.23 m AOD. It is expected that the crest level of the defences will be raised to 6.20 m AOD in accordance with the TE2100 Plan in order to maintain the current SoP up to 2100.

Based upon the above, the site is assessed to be at a low risk of flooding from the River Thames. However, a residual risk of flooding exists due to potential overtopping of the defences for events exceeding the SoP, due to a structural failure of the flood defence walls, or due to a failure of Thames Barrier to operate as intended.

The Environment Agency has provided outputs from its 2017 Thames Tidal Upriver Breach Inundation Modelling Study. The extents of flooding resulting from a breach of the River Thames flood defences for the present day and 2100 climate change scenarios are presented by **Figure 14** and indicate that the site is at risk of flooding.

Maximum flood levels for the present day and 2100 climate change scenarios are presented by **Figure 15** and **Figure 16** respectively. The model results indicate that peak flood levels across the southern site parcel for the present day and 2100 climate change scenarios are 2.80 m AOD and 3.68 m AOD respectively. Peak flood levels within the northern site parcel are shown to range from 3.18 – 3.55 m AOD in the present day scenario and 3.65 – 5.10 m AOD in the 2100 climate change scenario.

Flood hazard mapping for the present day and 2100 climate change scenarios are presented by **Figure 17** and **Figure 18** respectively. The flood hazard at the site is generally shown to be significant (i.e. dangerous for most people), with areas of extreme hazard (i.e. dangerous for all) identified along the site access roads in the 2100 climate change scenario. Refer to **Appendix D** for the Environment Agency EIA response letter.

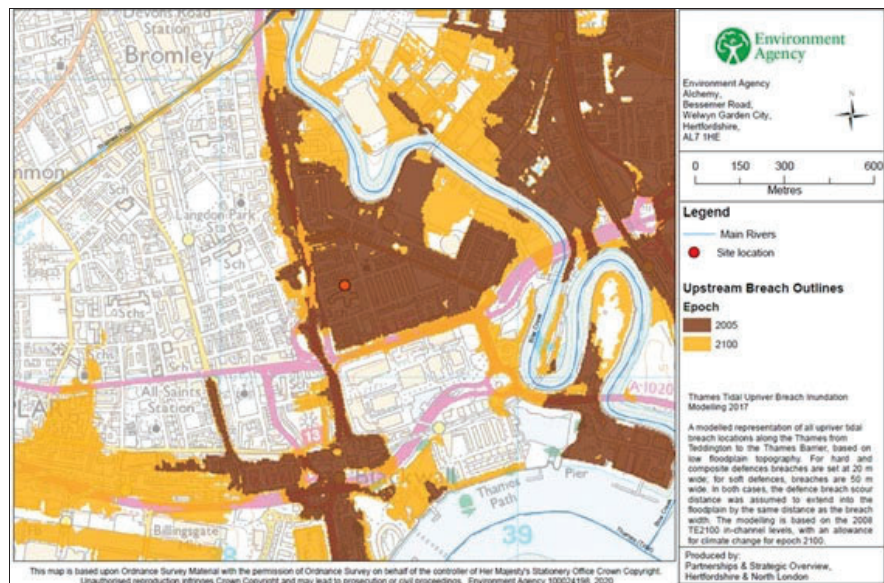
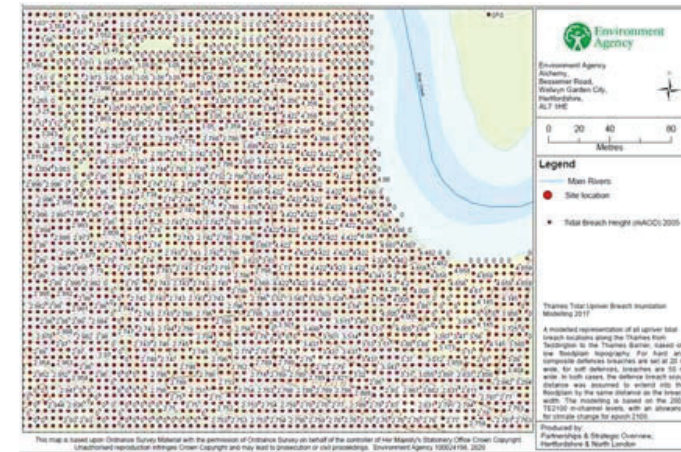
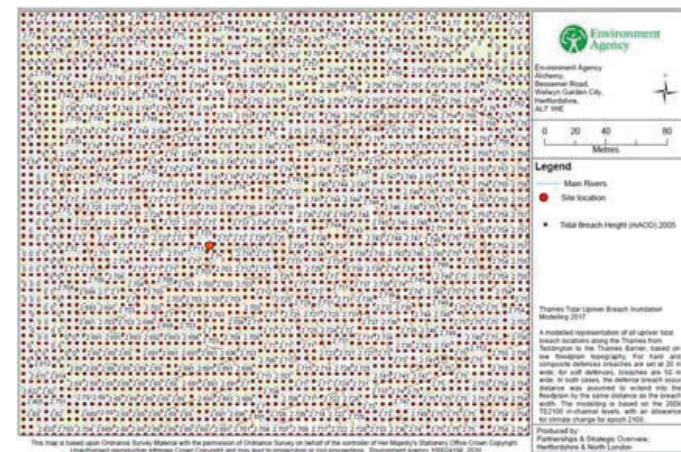


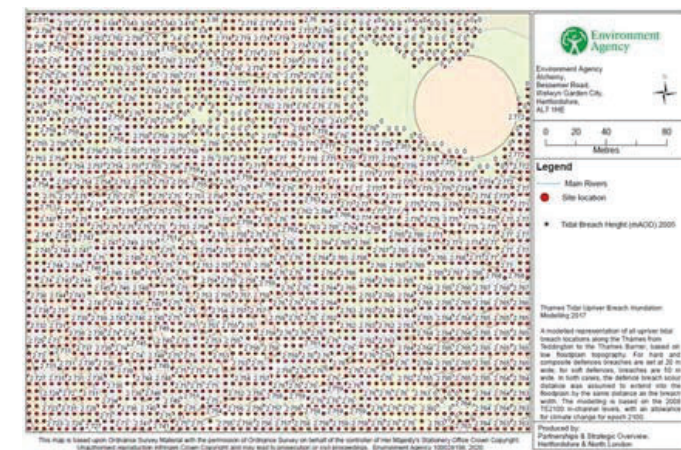
Figure 14 – Modelled Flood Extent – Breach. Tidal Upriver Breach Inundation Modelling Study 2017



North Aberfeldy Village



South-west Aberfeldy Village



South-east Aberfeldy Village

Figure 15 – Maximum Water Level – Breach (2005). Tidal Upriver Breach Inundation Modelling Study 2017