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FWMA Section 19 Screening Assessment

London Borough of Haringey

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1 INTRODUCTION

1.1 Terms of Reference

This Flood and Water Management Act (FWMA) (2010) Section 19 report was commissioned by Haringey Council in their role as Lead Local Flood Authority (LLFA)in response to a flood event which occurred on 17th August 2022 at various locations across the Haringey Borough.

Some reports of flood relate to leaking roofs or minor ponding of the highway where further detailed investigation is not considered to be warranted. This FWMA Section 19 Screening Assessment acts as an outline assessment to understand whether there are any instances of flooding that would have significant impact on public services or multiple properties which would warrant further detailed investigation.

1.2 Definition of flooding

Section 1 of the Flood and Water Management Act (FWMA) (2010) defines a flood as *'any case where land not normally covered by water becomes covered by water'…*
It does not matter for the purposes of subsection (1) whether a flood is caused by:

- Heavy rainfall;
- A river overflowing or its banks being breached;
- A dam overflowing or being breached;
- Tidal waters;
- Groundwater; or
- Anything else (including any combination of factors).

But "flood" does not include

- flood from any part of a sewerage system, unless caused by an increase in the volume of rainwater, entering or affecting the system; or
- a flood caused by a burst water main.

1.3 Approach to the Assessment

Section 19 of the FWMA 2010 which states that:

1. On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate
    a. which risk management authorities have relevant flood risk management functions, and
    b. whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
2. Where an authority carries out an investigation under subsection (1) it must
    a. publish the results of its investigation, and
    b. notify any relevant risk management authorities.

In accordance with the project brief the following activities were undertaken as part of this assessment:

- Assess rainfall data for the 17th August 2022 flood event.
- Collation of available information on the impacts of the 17th August 2022 flood event.
- Identify any locations where more detailed investigation should be undertaken.
- Identify responsible Flood Risk Management Authorities (where evident from the data provided)

This assessment will also indicate (where evident as part of the screening assessment) any flood resilient actions that may be taken to further manage the flood risk in the future. The identification of actions at any particular location does not necessitate the requirement to undertake a further detailed Section 19 investigation at any location where criteria for more detailed investigation is not met.

1.4 Definition of criteria for recommending more detailed investigation

The following criteria have been defined by Haringey against which the reported incidents of flooding will be considered. The following are considered in relation to flooding;

- Residential (Internal)
- Residential (External)
- Highways
- Major Transport Link
- Critical Infrastructure
- Commercial (Internal)
- Designated Sites

Flooding is defined in Section 1.2.

Internal flooding is considered as flows entering the 'living space' of a dwelling (basement or ground level within the property). All other areas within the plot boundary including garages and other buildings even if joined with the property are considered to be external flooding.

Highways are defined by the Highways Act (s.329 (1)):- ""highway maintainable at public expense" means a highway which by virtue of section 36 above or of any other enactment"

This assessment considers;

- a major transport link as all railway stations and railway tracks, a motorway or 'A' road, a road with a designated bus lane or a road defined in the Council's Congestion Strategy as a priority route.
- critical infrastructure as a hospital, an electricity sub-station, a fire or ambulance station, a potable water pumping station or a foul sewage pumping station.
- Designated sites are defined as nationally important heritage features, Grade 1 and 2 listed buildings, Wardown Park registered park and garden and conservation areas.

The following screening criteria have been defined by Haringey against which the reported incidents of flooding will be considered. To warrant a more detailed Section 19 investigation a flood must have:

- caused internal flooding of 10 or more adjacent residential properties;
- flooded 1 or more items of critical infrastructure
- caused internal flooding of a row of shops or 2 or more adjacent business premises
- caused a major transport link to be impassable or inaccessible
- caused flooding of designated sites

1.5 Limitations of the Assessment

The following project limitations are stated;

- This assessment is not intended to act as a detailed Section 19 investigation and should not be read as such.
- The assessment of the number of properties that flooded during the 17th August 2022 is reliant upon the number of individual properties which confirmed that they were affected by flooding. Therefore this assessment cannot make allowance for properties that may have flooded but have not been reported to Haringey Council (regardless of the reason for non-reporting).
- Any flood mitigation measures identified should be treated as notional (based on best available information) and further detailed consideration will be required prior to any implementation.
- Borehole logs from British Geological Survey (BGS) database have been assessed where available to consider potential for presence of groundwater. It is noted that the borehole logs only provide information on groundwater levels at a specific point in time and as such, it is not possible to derive the potential for groundwater flooding using borehole information alone.

2 STUDY AREA

2.1 Study Location and Context

The London Borough of Haringey is located in North London, bordering six other London Boroughs; Enfield to the north, Waltham Forest to the east, Hackney, Islington, and Camden to the south, and Barnet to the west. Haringey has an area of 3,000 ha and covers Tottenham, Hornsey, Muswell Hill, and Wood Green. It is bounded to the east by the River Lee and a number of reservoirs within the Walthamstow Wetlands. Figure 2-1 below shows the extent of the study area.

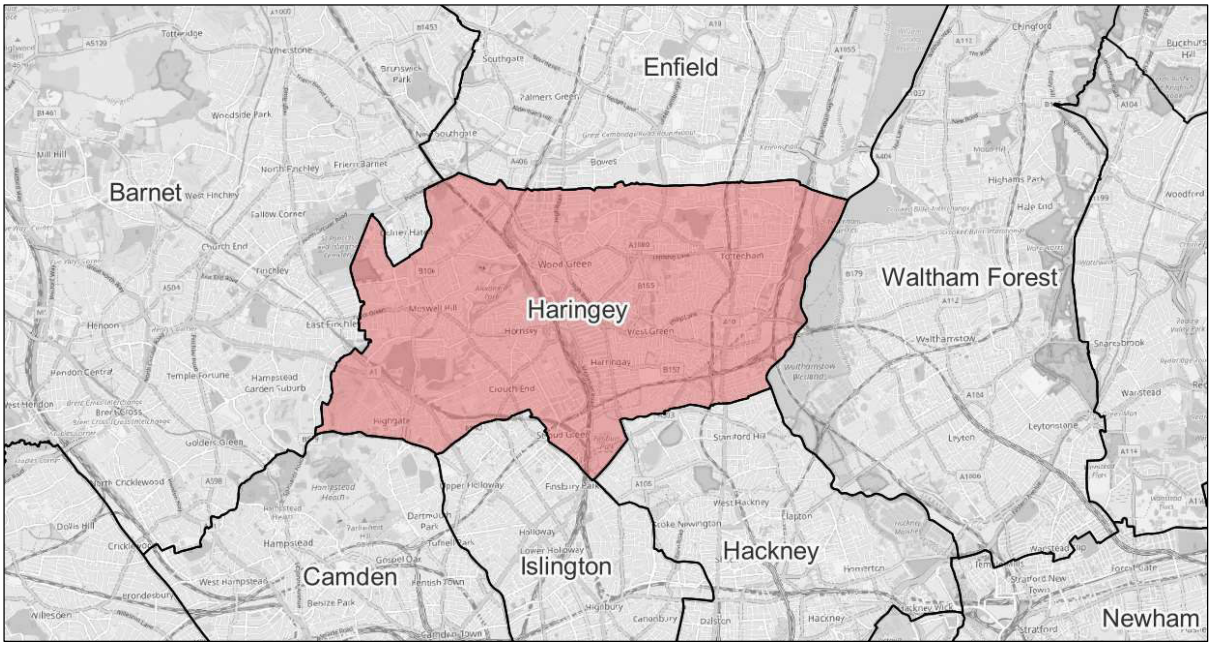


Figure 2-1 Map of Haringey

Haringey is served by a number of strategic roads including the A1 Archway Road, A10 Tottenham High Road, and A105 Green Lanes. It also contains three Underground railway lines and three national rail lines, particularly the Great Northern Route railway line which cuts through the middle of the borough from north to south.

2.2 Topography

Haringey generally falls eastward towards the River Lee. Its highest points are found in the west of the borough in Highgate at c.130m Above Ordnance Datum (AOD) and Muswell Hill (c.105mAOD), while central Haringey ranges from c.16mAOD to c.30mAOD. Land closer to the River Lee ranges from c.7mAOD to c.10mAOD.

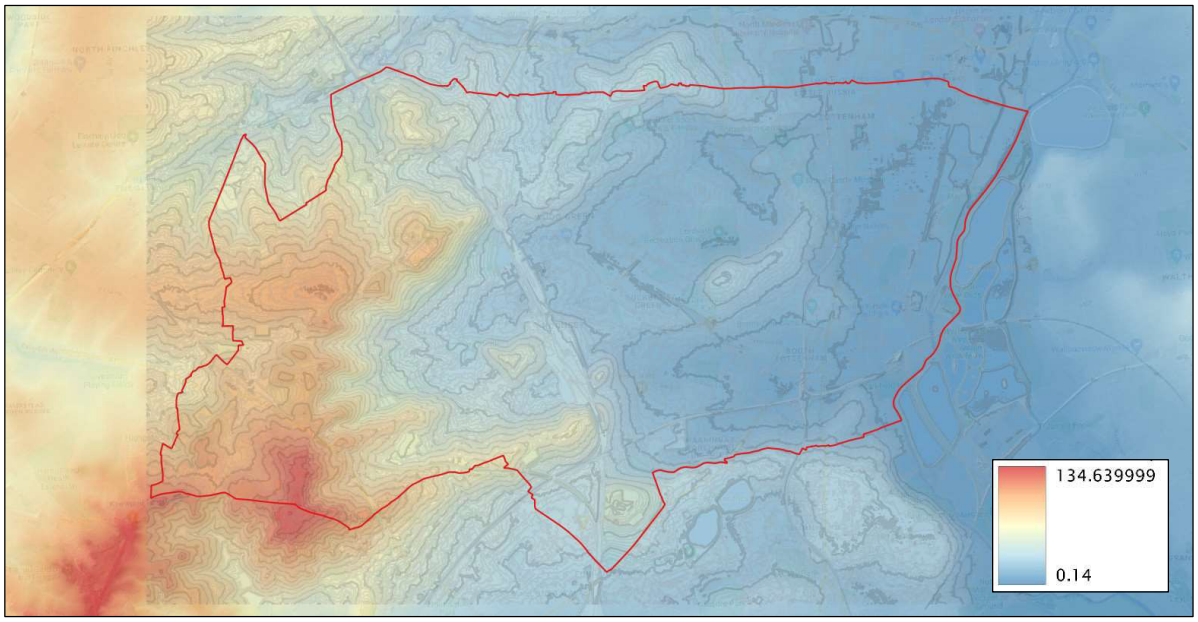


Figure 2-2 Topography of London Borough of Haringey

2.3 Geology and Soils

A review of the BGS superficial geology maps and bedrock geology maps indicates that the geology around Haringey is predominantly London Clay overlain by sands and gravels.

Historic borehole logs at grid references TQ38NW3, TQ39SW3, TQ38NW510, and TQ29SE402 (see Appendix A) identified similar ground conditions generally described as follows:

Made ground (silty clay with fragments of timber, brick rubble, and ballast) was encountered up to 2.0m below ground level (bgl), with London Clay (stiff brown and grey-blue silty clay) encountered beyond that to over 40m bgl.

2.4 Watercourses

Haringey lies within the Thames Catchment and is drained by the River Lee, which flows in a southernly direction along the eastern boundary of the borough.

Haringey's Strategic Flood Risk Assessment (SFRA) details how a number of watercourses within the borough are culverted and commonly described as "lost." The currently known alignment of watercourses within the borough are shown in Figure 2-3 below.

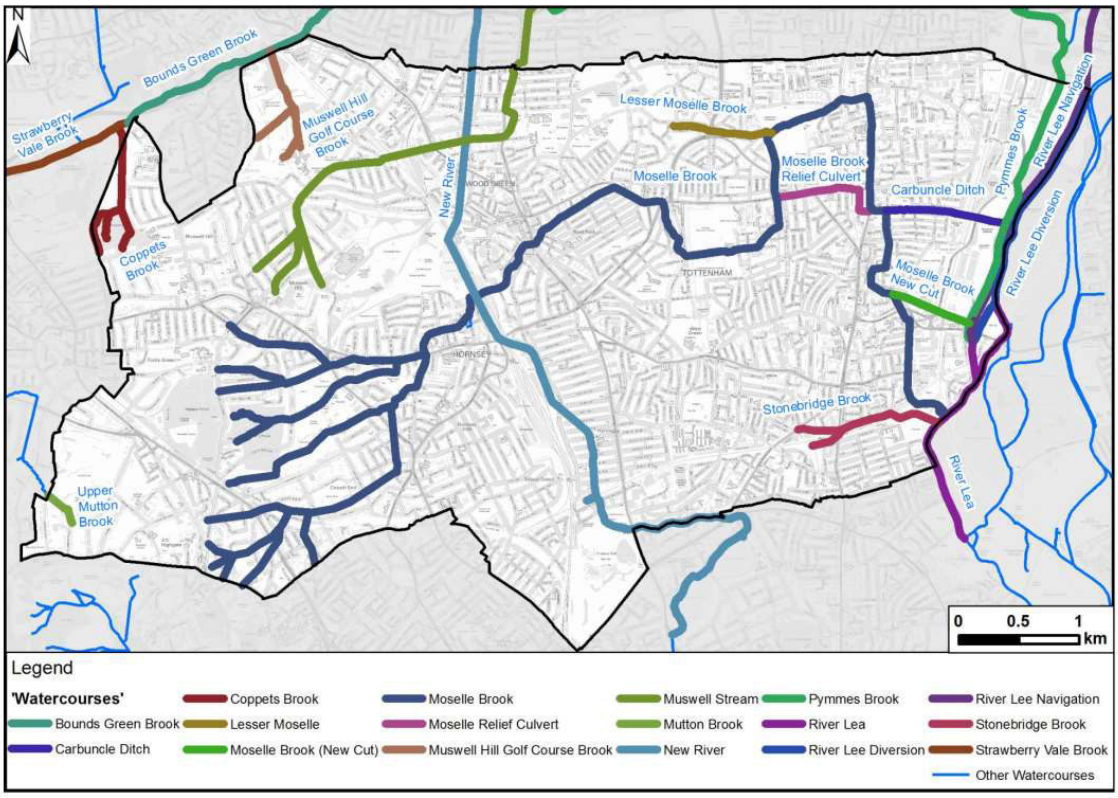


Figure 2-3 Overview of watercourses in Haringey and surrounding areas (from Haringey SFRA)

2.5 Flood Risk

2.5.1 Risk of Flooding from Rivers and Seas

Most of the Haringey area is contained within Flood Zone 1 whereby the annual risk of flooding from rivers or seas is less than 0.1%. Sections of Tottenham in the east of the borough, specifically a section of Lordship Recreation Park and the eastern extents of Bruce Grove and Tottenham Hale, are shown to fall within Flood Zone 2. Flood Zone 2 indicates areas wherein the annual risk of flooding, from either rivers or the sea, is between 0.1 and 1.0%.

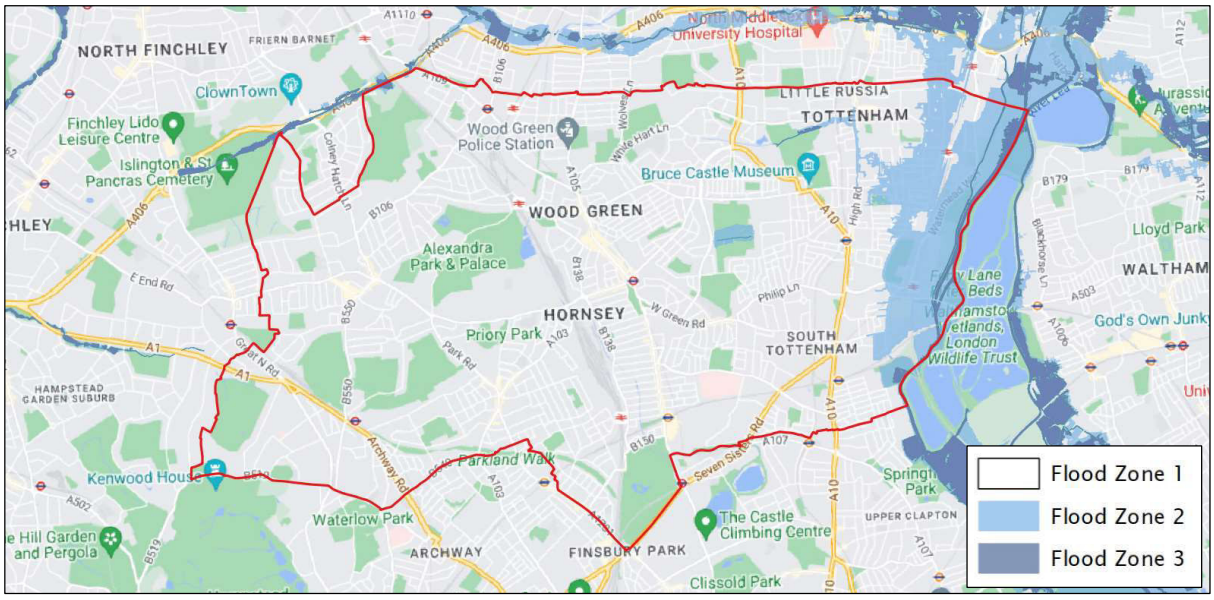


Figure 2-4 Flood Map for Planning

2.5.2 Risk of Flooding from Surface Water

The surface water Long-Term Flood Risk Map is shown in figure 2-5. There are areas of high-risk flooding throughout the study area, notably along the A504 Priory Road, the A1080 Turnpike Lane, the A105 High Road, the A109 Bounds Green Road, Park Road, residential areas north of The Roundway, and residential areas north of Seven Sister Road in South Tottenham.

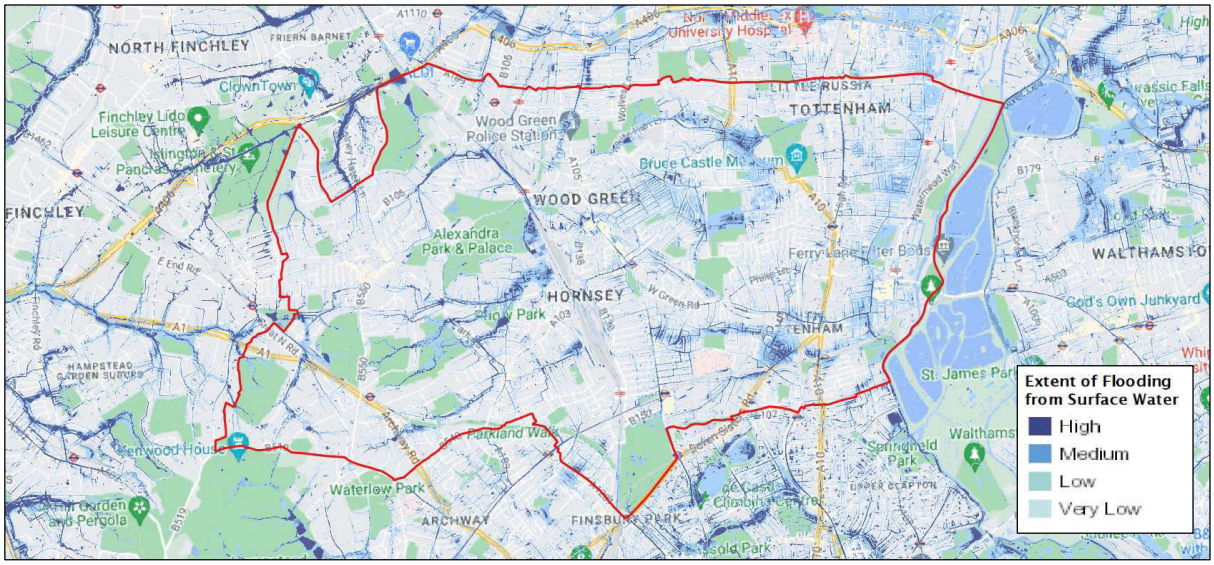


Figure 2-5 Surface Water Long Term Flood Risk Map

3 OVERVIEW OF THE 17TH AUGUST 2022 EVENT

3.1 Rainfall

At 08:52 on 17th August 2022 the Met Office issued an Amber Warning of Thunderstorm expected between 11:00 and 22:00 that day. The warning covered the East of England, London, and South East England.

Rainfall data was obtained from the EA for review from gauges located in Hornsey (grid reference TQ 31027 89597), Preston (grid reference TQ 18610 87066) and Redbridge (grid reference TQ 41448 88765).

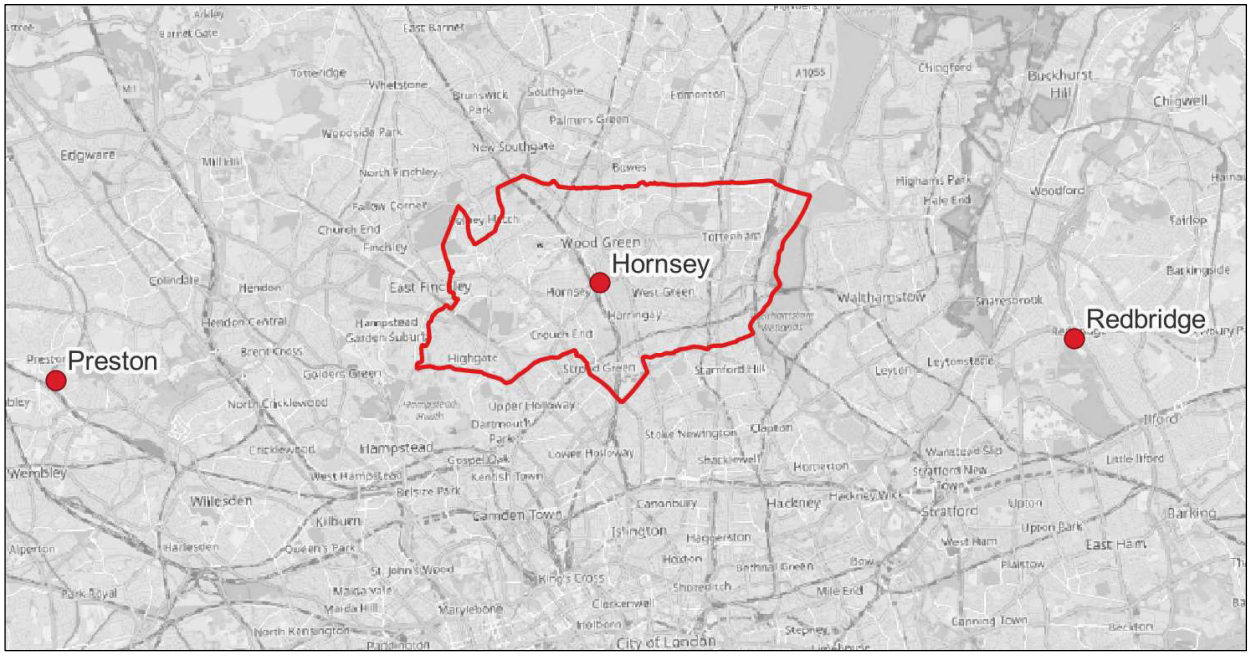


Figure 3-1 Locations of EA Rainfall Gauges

The most significant rainfall was recorded at Redbridge between 14:00pm and 20:00pm, in which time 31mm fell. This rainfall is estimated as a 1 in 3-year return rainfall event based on comparison of data obtained from the Flood Estimation Handbook. A total of 32.6mm was recorded for the whole day at the Redbridge gauge.

The rain gauge at Hornsey recorded 27.4mm over 24hrs, with 22mm of this falling between 14:00pm and 18:30pm. This 22mm rainfall is estimated as a 1 in <2-year return rainfall event.

The rain gauge at Preston recorded 16.8mm over 24hrs, all falling between 14:30pm and 18:00pm. This rainfall is estimated as a 1 in 1.5-year return rainfall event.

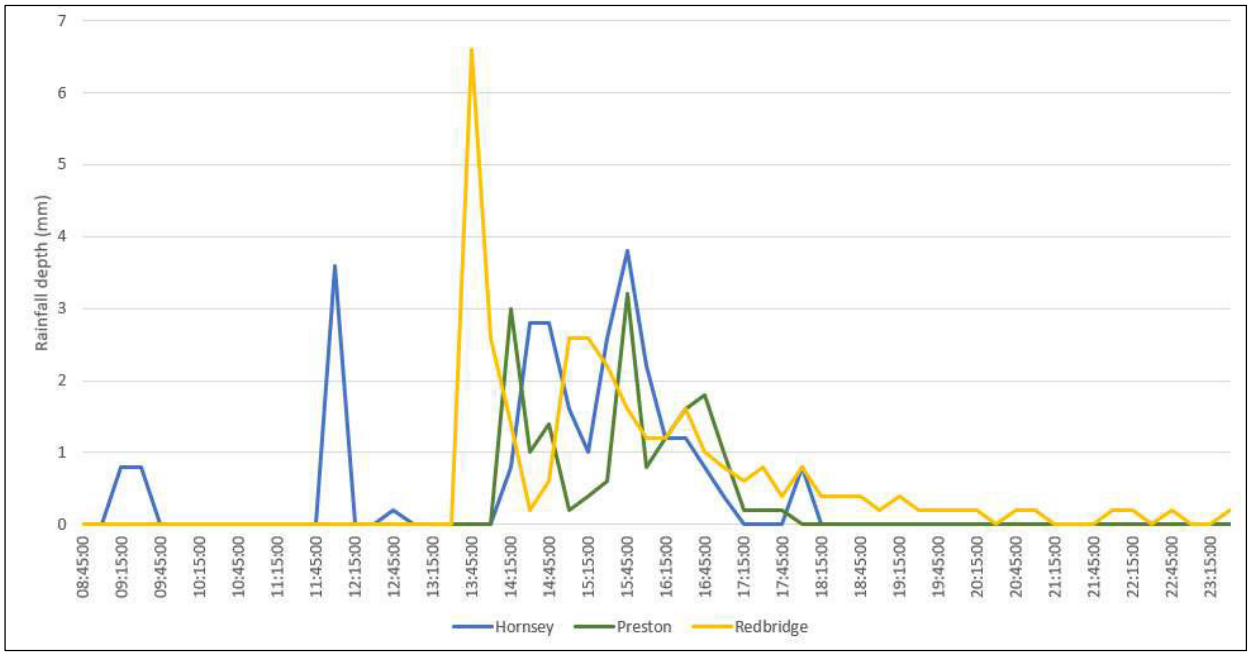


Figure 3-2 EA Rain gauge data, 17th August 2022

The relatively low rainfall return periods recorded at the EA rain gauges is not consistent with the flood reports provided from the area. The distance of the Preston and Redbridge gauges from Haringey mean that the recorded rainfall at these locations is less representative of conditions within Haringey at the time. It is possible that the areas in which the gauges are located in Preston and Redbridge may not have experienced the same intensity of rainfall as Haringey.

A number of privately owned weather stations registered with the Met Office are also located within Haringey, the locations of which are shown in Figure 3-3 below.

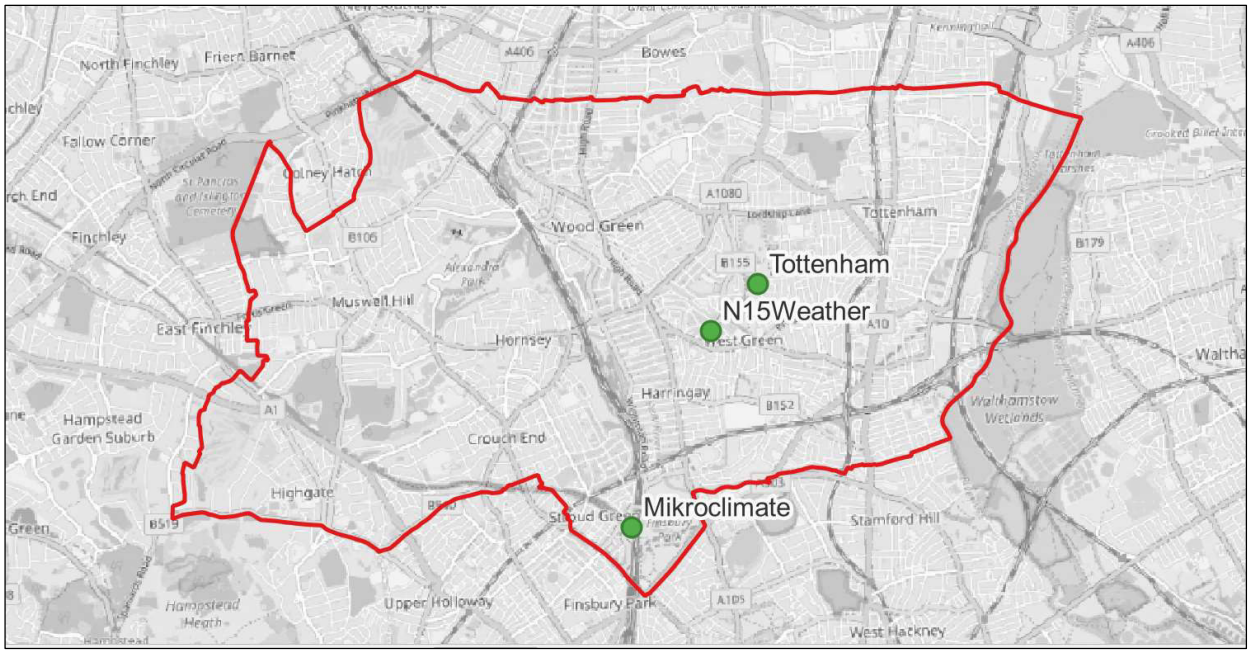


Figure 3-3 Locations of Personal Rainfall Gauges

The most significant rainfall was recorded by the Mikroclimate station in the south of the borough, which recorded 56.3mm falling between 14:15pm and 18:30pm. This rainfall is estimated as a 1 in 36-year return rainfall event.

The N15Weather station recorded 44.4mm falling between 14:15pm and 18:30pm, which is estimated as a 1 in 14-year rainfall event. The Tottenham station recorded 30.1mm falling between 14:30pm and 16:30pm, which is estimated as a 1 in 4-year rainfall event.

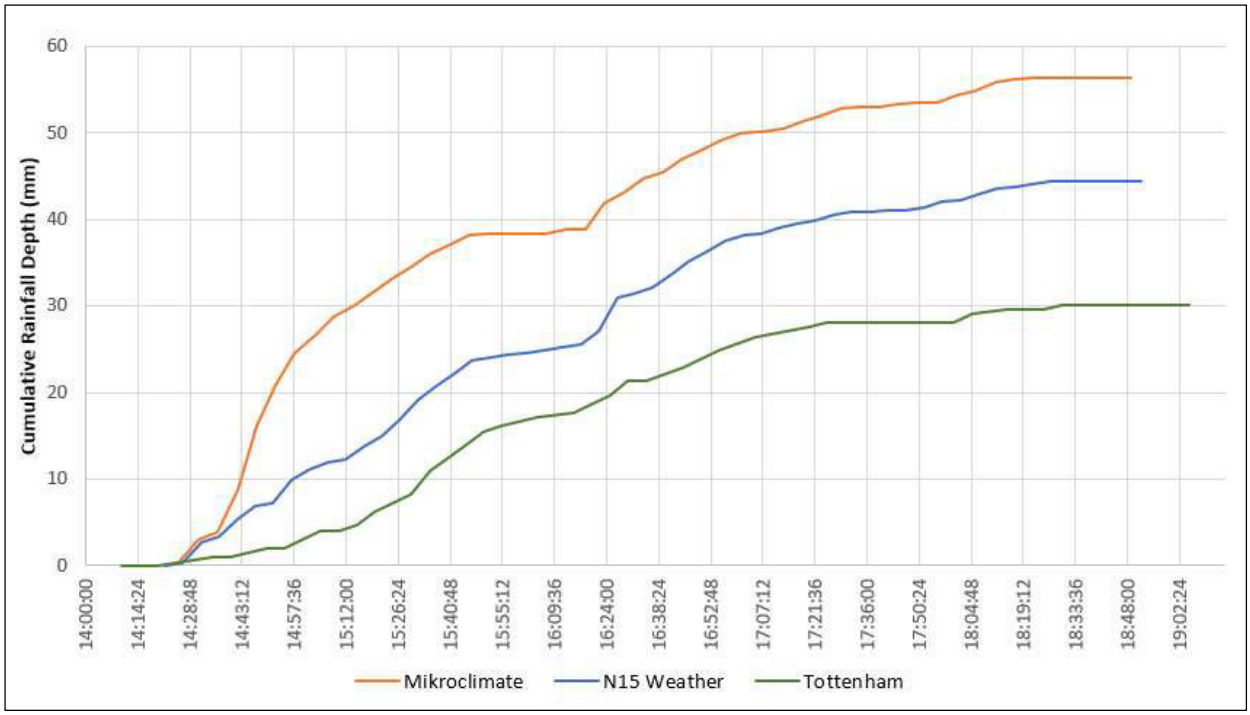


Figure 3-4 Personal rain gauge data, 17th August 2022

The N15Weather and Tottenham stations are both within 2km of the EA rain gauge located in Hornsey, but both stations recorded higher depths of rainfall. The Mikroclimate station is located c.2km south of the EA rain gauge in Hornsey and is noted to have recorded 28.9mm more rainfall depth than the EA gauge. This data indicates that the varying volume of rainfall across the borough on 17th August 2022 may have been higher on average than what the EA gauge in Hornsey recorded.

The data collected would indicate that the rainfall which occurred on the 17th was highly spatially variable. Due to the spatial variance of the rainfall, there is strong potential that the rain gauges did not record the most extreme rainfall patters which occurred across the Borough.

Rainfall return periods of >1 in 14 year and >1 in 36 year are anticipated to give rise to surface water flooding, water course flooding and sewer / high way drainage flooding, depending upon the local capacity and operational status of the drainage network.

3.2 Groundwater

The Strategic Flood Risk Assessment (SFRA) for Haringey notes that Haringey is not considered to be at risk from groundwater flooding.

The Haringey Local Flood Risk Management Strategy (LFRMS) report indicates that the areas with most potential for groundwater flooding to occur at the surface are along the River Lee on the eastern boundary of the borough, and in Tottenham along the culverted Moselle Brook.

18no. incidents of groundwater flooding have been recorded in the LFRMS dated between 2002 and 2009 and located primarily around Tottenham, Muswell Hill, and Wood Green.

Groundwater monitoring data has been provided by the EA Display and Point groundwater station, located at Stroud Green in the south of the borough. Monthly recordings have been provided for the borehole from 04/09/1973 to 13/10/2022, with groundwater levels in relation to ordnance datum provided. The borehole is recorded at 24.61mAOD. The highest groundwater level on record was -12.09mAOD, or 36.7mbgl, recorded on 04/06/2006. The lowest recorded water level was -30.82mAOD, or 55.43mbgl, and was recorded on 03/11/1997. This provides a range of 13.74m.

Though records are missing for the month of August, the groundwater levels on the 11th June preceding the flood event were -14.67mAOD (39.28mbgl). These levels fell to -28.41mAOD (53.02mbgl) by the 09th of September. Neither groundwater level is extreme, with 105 peak groundwater levels higher than June's -14.67mAOD since records began. Based on the records available there is no indication that groundwater levels were above, or close to, ground level at the borehole location (and surrounding areas) during the 17th August event.

It is noted that the data provided is limited to the area near the borehole and whilst it will provide a general indication of ground water levels in the catchment, it does not confirm groundwater levels throughout the Haringey area. In addition, the borehole is not located in an area thought to be most at risk from groundwater flooding. However in the absence of additional borehole monitoring data it is not possible to determine the extent of risk across the catchment.

It is noted that the dispersed nature of flooding would indicate that groundwater flooding was not a primary source of flooding on this date.

4 ANALYSIS OF FLOOD EVENTS

4.1 Recorded Incidents

Haringey Council received a total of 32 reported flood related incidents across the borough in relation to the flooding on 17th August 2022. Tables 4-1 to 4-5 summarise the reports of flooding received by Haringey Council. Each loctaions has been assessed to determine whether they warrant further detailed investigation under Section 19 of FWMA.

Table 4-1: Schedule of recorded Highway flood incidents in Haringey

Highway Flood Records			
Location	Major transport link / critical infrastructure	Reported Impact	Further Investigation Required (Y/N)
Hampden Road	N	Road completely flooded	N
Park Road	N	Park road near Muswell Hill	N
Maidstone Road	N	Several fountains of water spouting from the tarmac Brownlow road junction with Maidstone road N11	N
Crowland Road	N	Flooding in street (not affecting properties yet)	N
Highgate Spinney, Crescent Road	N	Flooding in roadway due to blocked drain. Not affecting properties.	N
N15 6AG	N	Half a foot of water – carpark and covered footpath	N
N15 6JN	'A' Road	Bus lane and footpath completely flooded	Y
Queens Avenue	N	The drain on cnr of Queens Ave and Tetherdown, N10 is looking like it needs your attention	N
Park Road	N	Major flooding on Park Road at usual location near junction with Muswell Hill	N
N8 0SJ	'A' Road	Surface water at the edge of the road / pavement	Possible
Hampden Road	N	Severe flooding – "water level with the pavement"	N
Antill Road	N	Drains blocked and leaves, hardened soil and refuse at Anthill Road and Hale Gardens	N
Castlewood Road	N	Flooding. Caller advised water levels are knee deep in street	N
Ermine Road	N	Blocked customer and baby in her house – blocked drain	N
Hampden Road	N	Blocked drains flooding street and coming up to customer's house	N
Bounds Green Road	'A' Road	Flooding at the junction of Nightingale Road and Bounds Green Road, completely flooding the cycle land and part of the traffic lane	Y
Park View Road	N	Underpass at the bottom of parkview road blocked with raw sewage	N

Ranelagh Road	N	Flooding in road	N

Table 4-2: Schedule of recorded Residential flood incidents in Haringey

Residential Flood Records			
Location	No. of Properties Internally Flooded	Reported Impact	Further Investigation Required (Y/N)
176 St Ann's Rd	1	None recorded.	N
Wavell House Hillcrest	1	Out of hours emergency job with reference 269287/1 fixed by plumber	N
Larkspur Close Sheltered Housing 1-37 Jellicoe Rd	Unknown	Canal overflowed into lower flats	N*
Vartry Road	1	Water coming from ceiling	N
8 Elm Park Avenue	1	Flooding in street entering premises	N
Hampden Road	1	Water is passing to her property	N
20 Sheldon Avenue	1	Flooding to front garden and property	N
64 Avenue Road	1	Flat 1 Basement on ground floor, sewage is coming through the drains	N

*Notes on Larkspur Close: While this flood location does meet the threshold for triggering Section 19, Larkspur Close is not considered further within this report due to an ongoing flood alleviation scheme to help address flooding issues in this area. The scheme is currently at detailed design stage, to include a detention basin, rain gardens, and permeable paving.

Table 4-3: Schedule of recorded Business flood incidents in Haringey

Business Flood Records			
Location	No. of Properties Internally Flooded	Reported Impact	Further Investigation Required (Y/N)
369 Green Lanes (Rakkas restaurant and Manor House Dental Surgery)	2	Flooding from highway through front door	Y

Table 4-4: Schedule of recorded School flood incidents in Haringey

School Flood Records			
Location	Critical infrastructure	Reported Impact	Further Investigation Required (Y/N)
Pavilion Pre-School, Park View Road	N	Leaks in the ceiling	N
Harris Academy Tottenham, Ashley Road	N	Reception flooded to 4cm	N

Table 4-5: Schedule of other recorded flood incidents in Haringey

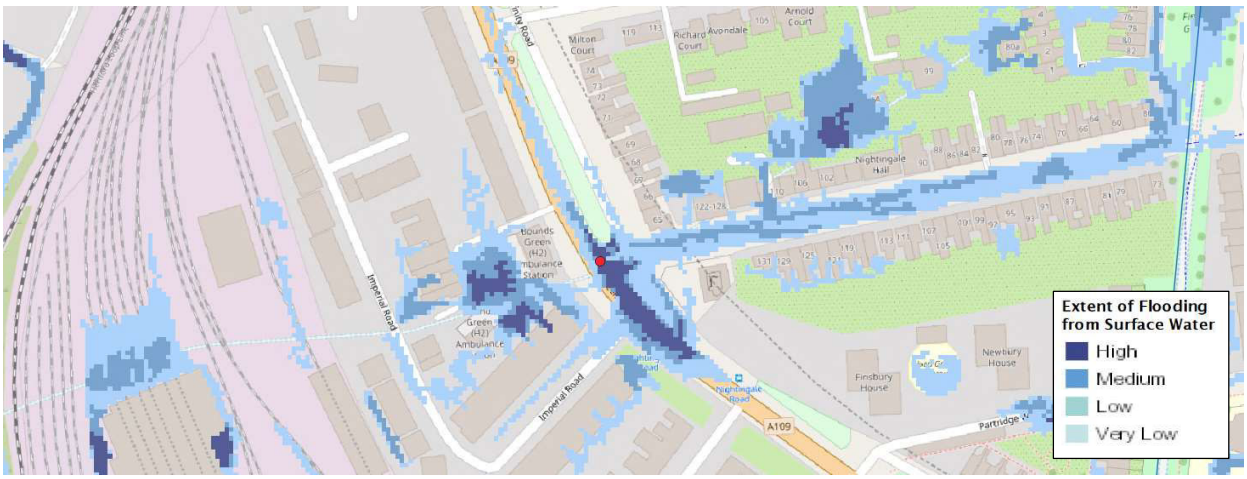
Other Flood Records			
Location	Critical infrastructure	Reported Impact	Further Investigation Required (Y/N)
Ferry Lane Estate	N	Flooding to the tow path at the edge of the Ferry Lane Estate	N
Crouch End Health Centre, Middle Lane	N	Leaks reported	N
345 White Hart Lane, Tottenham	N	Severe damage – roof collapse	N

5 RECOMMENDATIONS FOR POTENTIAL DETAILED INVESTIGATION

5.1 Shortlisted Flood Locations

Table 5-1 below lists the flood records which meet thresholds for triggering Section 19. They consist of one example of commercial flooding (internal) and three examples of highway flooding, all of which fall within areas at risk of surface flooding as indicated by EA flood mapping. These flood records warrant formal investigation under Section 19.

Table 5-1: Flood Locations Triggering Section 19

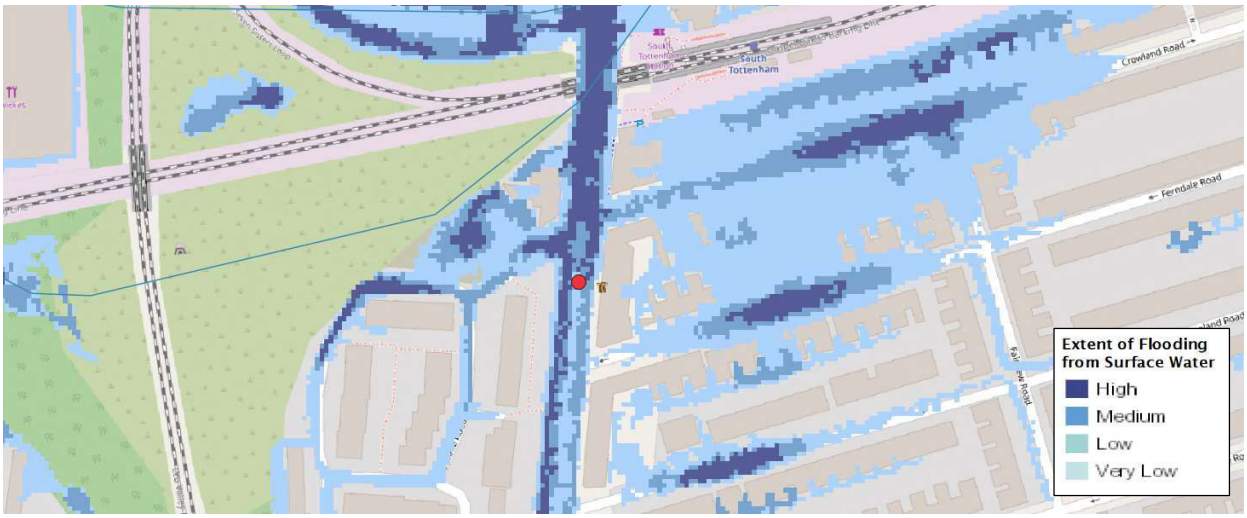
Location	Recorded Impact	Action Taken	Possible Cause
369 Green Lanes (Rakkas restaurant and Manor House Dental Surgery)	Flooding from highway through front door.	Requested highways check nearby gullies/drains. TCM officer to also visit owner.	Unknown
369 Green Lanes – EA Risk of Flooding from Surface Water: 			
Bounds Green Road	Flooding at the junction of Nightingale Road and Bounds Green Road, completely flooding the cycle lane and part of the traffic lane	Blockage cleared due to leaves over gully frame & cover. Gullies also checked bounds green Road opp. imperial road cleaned but not running probably tree root damage, further investigation required.	Blocked gullies and potential drain blockage due to tree root ingress.
Bounds Green Road – EA Risk of Flooding from Surface Water: 			

Location	Recorded Impact	Action Taken	Possible Cause
N8 0SJ	Surface water at the edge of the road / pavement	None recorded.	Unknown

N8 0SJ – EA Risk of Flooding from Surface Water:

N15 6JN	Bus lane and footpath completely flooded	None recorded.	Unknown

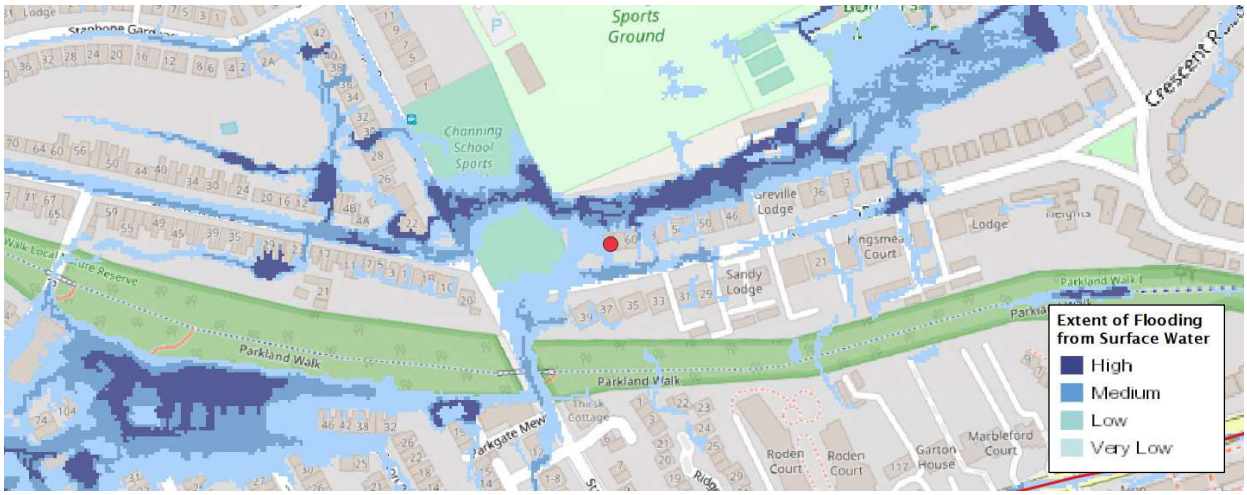
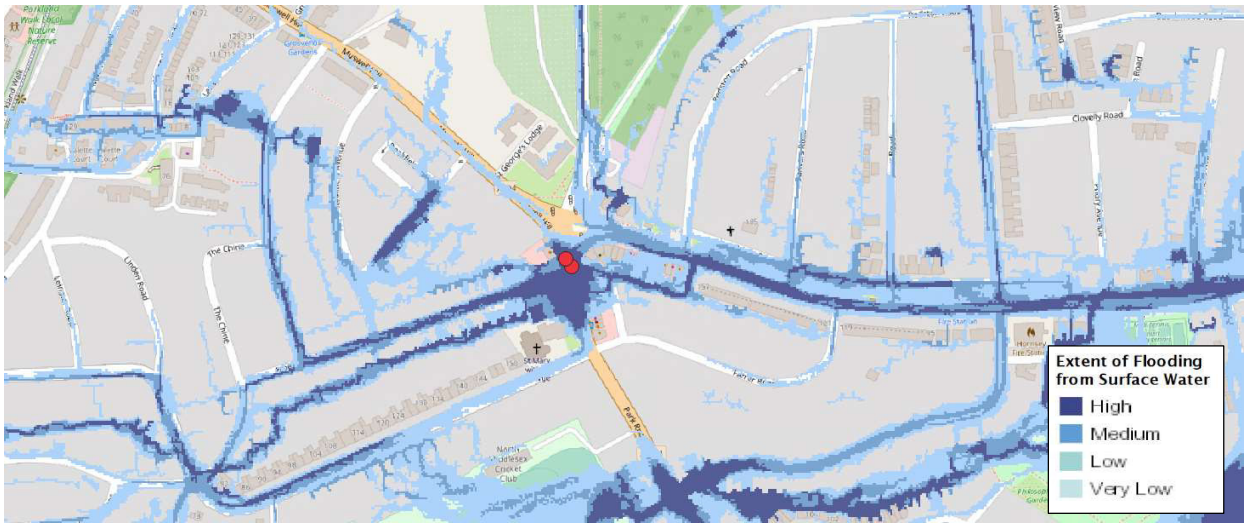
N15 6JN – EA Risk of Flooding from Surface Water:



5.2 Additional Locations of Note

Table 5-2 below lists recorded flood locations at which previous reports have also identified flooding, however the criteria set out by this assessment for further detailed investigation has not been met. These locations have been noted by Haringey.

Table 5-2: Reoccurring Flood Locations

Location	Recorded Impact	Action Taken	Possible Cause
64 Avenue Road	Flat 1 Basement on ground floor, sewage is coming through the drains	Site attended @ 18:33, Car parked over gully, can't locate owner of vehicle	Sewer flooding
64 Avenue Road – EA Risk of Flooding from Surface Water: 			
Park Road	Major flooding on Park Road at usual location near junction with Muswell Hill	Site attended 18:20 on 17-08-2022, gullies reported as cleaned and running.	Unknown
Park Road	Park road near Muswell Hill	None reported.	N
Park Road – EA Risk of Flooding from Surface Water: 			

6 CONCLUSIONS AND RECOMMENDATIONS

The flooding that occurred on 17th August 2022 in Haringey was caused by rainfall which has been recorded as ranging from a 1 in 1.5 to a 1 in 36 year rainfall event.

It is noted that the dispersed nature of flooding would indicate that groundwater flooding was not a primary source of flooding on this date. Ground water montoring data obtained did not highlight any groundwater flood risk. Other sources of flood, including surface water,fluvial, highway drainage and sewer incapacity are all considered to have been potential contributors to flood risk during this flood event.

32 calls were made to Haringey Council to report flood locations, of which four met criteria warranting consideration of further investigation under Section 19 of the FWMA. A number of flood reports relate to building failure (eg. leaking roof) and are not considered further. The remaining locations have been considered in terms of a set of screening criteria set out to determine severity and criticiality.

It is noted that the number of properties that actually experienced flooded during the 17th August 2022 rainfall event may have been more extensive than the number reported. This assessment cannot speculate on the number of properties that experienced flooding, as it is based solely on the information made available for the purposes of the study.

The four locations which meet screening criteria as defined within this report are as follows:

- 369 Green Lanes;
- Bounds Green Road;
- Highway at N8 0SJ; and
- Highway at N15 6JN.

Barring the highway at N15 6JN, these locations were also subject to flooding during flood events of August 2021 with mechanism of flood considered (for August 2021 flood) and reported upon with report references M01600-13_DG01 and M01600-15_DG01. Haringey LLFA have advised that no further investigation is considered necessary in these locations at this time.

6.1 Next Steps

The highway at N15 6JN had not previously been identified within previously undertaken Section 19 investigations. This location is located within Critical Drainage Area 4_57 and therefore falls within one of the areas of the borough targeted for cyclic cleansing of gullypots on a frequency of 1-2 times per year depending upon criticality.

The following next steps have been identified for the location of Highway at N15 6JN:

- Haringey have scheduled maintenance of gullypots along this section of highway to coincide with the next round of gully cleansing within the borough.
- Haringey will maintain a watching brief during future instances of high intensity rainfall which triggers reports of flooding in the borough to establish whether other mechanisms of flood are likely to be influencing this location. Where there are repeat instances of reported flooding at this location, Haringey will undertake more detailed investigation.

Appendix A

Borehole Logs

WD-2012-290

TQ29/

Driller....Herbie.....

SMITH & WEBB (DRILLING) LTD
BORING RECORD

Site Muswell **B.H. No** 1.

Client Muswell Hill Golf Club.

Site Address Rhodes Avenue, Muswell Hill, London Location : 529108, 190736.

Boring Started 30th April 2012 **Boring Completed** 16th May 2012 **Level**.

Dia. of Bore 250 & 150mm **Cased to** 6m **b.s with** 150mm **dia. casing and to** **b.s. with** **dia. casing**

Water struck at: (1) 71m **b.s. (2)** **b.s. (3)** **b.s. (4)** **b.s.**

Standing W.L. in bore at 64m **on** **b.s.**

Remarks. 72m of 150mm diameter lining tube installed. Tested. A1. Drawdown 0.10.

	DEPTH		THICKNESS	SAMPLE DETAILS		
	FROM	TO		NO.	TYPE	DEPTH
Tarmac bricks	G.L.	0.40	0.40			
Timber	0.40	2.00	1.60			
Grey and brown clay	2.00	18.00	16.00			
Brown clay	18.00	36.00	18.00			
Grey blue clay mudstone	36.00	49.00	13.00			
Hard grey silty clay	49.00	56.00	7.00			
Red green grey clay	56.00	67.50	11.50			
Chalk & flints	67.50	120.00	55.50 120.00			

Name and Number of Shaft or Borehole: Hornsey Brewery

6-in Map Registration No. TQ38NW/3

National Grid Reference 3092.8949

Page

Geological Classification	Description of Strata	Thickness Ft	Thickness In	Depth Ft	Depth In
	Brought Forward				
	Summary of Progress (1906) p. 151				

Hornsey. Hornsey Brewery, Messrs. Caffyn, Clarendon Road, 250 yards north of Hornsey Station, G.N.R., eastern side of Line, 1898 ?).

London Map 3 N.W. Height above Ordnance Datum, 85 feet.
Made and communicated by Messrs. Isler.
Lined with 184 feet of tube, 5 inches in diameter.
Water-level 11 feet down. Supply 1,000 gallons an hour.

		Thickness. Ft.	Depth. Ft.	
Well [? old], the rest bored		—	5	
[London Clay]	Yellow clay	15	20	
	Yellow clay and stone	9	29	
	Blue clay	83	112	
	Yellow clay	7	119	
[Reading Beds, 27 feet ?]	Grey mottled clay	2	121	
	Sandy clay	2	123	
	Dead sand	17	140	
	Clay and shells	6	146	44 50
[Thanet Sand, 22 feet]	Dead sand	12	158	
	Black pebbles [flints ?] and sand ...	10	168	51 21
Chalk and flints...		112	280	85 34

TQ 38NW/23

256 TQ 38/23

129

NGR TQ 3087 8956 Hornsey, Middx.

Tr 2 F.F. Rhodes, Esq (V.F. Rhodes & Co, Ltd)

Messrs. Caffyn, Hornsey Brewery, Clarendon Road, 250 yds north of Hornsey Station, G.N.R., eastern side of line, 1898.

Made & communicated by Isler.

Details in Summary of Progress, 1906, p. 151.

Visited by D.T. Campbell, May 1947.

Well dismantled.

Depth, approx 500 ft. O.D. + 20.

Visited. Old spindle pump still in position and pit full of water. Inaccessible. 25:6:62 KWM

Hornsey. HORNSEY BREWERY, MESSRS. CAFFYN, Clarendon Road, 250 yards north of Hornsey Station, G.N.R., eastern side of Line, 1898 ?).

London Map 3 N.W. Height above Ordnance Datum, 85 feet.
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		Thickness.	Depth.
		Ft.	Ft.
Well [? old], the rest bored		—	5
[London Clay]	Yellow clay	15	20
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	Black pebbles [flints ?] and sand ...	10	168
Chalk and flints...		112	280

256/129
TQ 38/23

		ft	ins
256/129	Well	5	0
	London Clay	114	0
	Woolwich & Reading Beds (? Intermediate Type)	? 27	0
	Thanet Sand	22	0
	Upper Chalk	112	

Swatchin.

TQ 38 NW 73.8
3357 8951

Contract Name	TOTTENHAM	Borehole No. 3
		Sheet 1 of 2

Method of boring Light cable percussion
Diameter 200 mm
Ground level 17.30 m O.D.
Start 18.5.83.
Finish 18.5.83.

Daily progress	Water levels	In-situ tests	Samples	Depth (m)	Reduced level (m O.D.)	Thickness (m)	Description of Strata	Legend
				0.60	16.70	0.60	Made Ground: Brick rubble, cobbles and gravel	
			U	1.50	15.80	0.90	Firm brown and reddish brown mottled silty CLAY with a trace of claystone and root fibres	
			J					
			U					
			J					
			U					
			J			7.50	Firm to stiff fissured brown silty CLAY with partings of bluish grey silty CLAY and pockets of silt and fine silty sand	
			U					
			J					
			U					
			J					
			U	9.00	8.30			
			U					

Notes Ground level deduced by extrapolation from survey drawings supplied by the Client

Contract Name	TOTTENHAM	Borehole No. 3
		Sheet 2 of 2

Method of boring
Diameter

Ground level
Start
Finish

Daily progress	Water levels	In-situ tests	Samples	Depth (m)	Reduced level (m O.D.)	Thickness (m)	Description of Strata	Legend
			U					
			J					
			U					
			J					
			U					
			J			13.00	Stiff to very stiff fissured grey silty CLAY with partings of silt and traces of iron pyrites	
			U					
			J					
			U					
			J				Claystones	
			U					
			J					
			U	20.00	-2.70		Bottom of Borehole	

18/5

Notes

Terresearch Limited	Report No. S.33/642	Appendix 1	Sheet 5

GEOLOGICAL SURVEY OF GREAT BRITAIN

RECORD OF SHAFT OR BORE FOR MINERALS

(For Survey use only)

6-inch Map Registered No. TQ39SW/3

Name of Shaft or Bore given by Geological Survey:

Name and Number given by owner: Messrs. Warne's India Rubber Works

Nat. Grid Reference 3414.9024

For whom made

Town or Village Tottenham County London

Exact site { Attach a tracing from a map, or a sketch-map, if possible.

Purpose for which made Well

1" N.S.Map No.	1" O.S.Map No.	Confidential or not
258		

Ground Level at shaft / bore relative to O.D. If not ground level give O.D. of beginning of shaft / bore

Made by Date of sinking

Information from Date received

Examined by

SPECIMEN NUMBERS AND ADDITIONAL NOTES

(For Survey use only) Geological Classification	Description of Strata	Thickness Ft.	Thickness In.	Depth Ft.	Depth In.
	London memoir II p. 124 in full			251	
				76·50 m	

TOTTENHAM. Messrs. Warne & Co.'s India-rubber Works.

Sunk and communicated by MR. E. BURTON. (Memoirs, vol. iv.)

	Thickness. ft.	in.	Depth. ft.	in.
Surface-earth and gravel	4·57	15	15	4·57
Blue [London] Clay	21·34	70	85	25·91
Green sand	0·61	2	87	26·52
Coloured [mottled] clay	1·83	6	93	28·35
[Woolwich and Thanet Beds.] Live sand	0·61	2	95	28·96
Dead sand, with a vein of pebbles about 7 or 8 feet from the bottom (2·13 or 2·44m)	15·85	52	147	64·81
Chalk	31·70	104	251	76·50

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