CABINET MEMBER SIGNING

Monday, 7th March, 2022, 10.00 am

Members: Councillor Seema Chandwani – Cabinet Member for Customer Services, Welfare, and the Public Realm

1. APOLOGIES FOR ABSENCE

To receive any apologies for absence.

2. DECLARATIONS OF INTEREST

A member with a disclosable pecuniary interest or a prejudicial interest in a matter who attends a meeting of the authority at which the matter is considered:

(i) must disclose the interest at the start of the meeting or when the interest becomes apparent, and
(ii) may not participate in any discussion or vote on the matter and must withdraw from the meeting room.

A member who discloses at a meeting a disclosable pecuniary interest which is not registered in the Register of Members' Interests or the subject of a pending notification must notify the Monitoring Officer of the interest within 28 days of the disclosure.

Disclosable pecuniary interests, personal interests and prejudicial interests are defined at Paragraphs 5-7 and Appendix A of the Members' Code of Conduct

3. CONTRACT VARIATION FOR PROVISION OF MOBILE NETWORK VOICE AND DATA SERVICES (PAGES 1 - 6)

4. DISCRETIONARY HOUSING PAYMENTS POLICY (PAGES 7 - 38)

5. FLOOD WATER MANAGEMENT INVESTMENT PLAN (PAGES 39 - 192)

6. HIGHWAYS AND STREET LIGHTING INVESTMENT PLAN (PAGES 193 - 220)

7. EXCLUSION OF THE PRESS AND PUBLIC

Item 8 is likely to be subject to a motion to exclude the press and public be from the meeting as it contains exempt information as defined in Section 100a of the Local Government Act 1972 (as amended by Section 12A of the Local Government Act 1985); paras 3 and 5, namely information relating to the financial or business affairs of any particular person (including the authority holding that information) and information in respect of which a claim to legal professional privilege could be maintained in legal proceedings.

8. EXEMPT - CONTRACT VARIATION FOR PROVISION OF MOBILE NETWORK VOICE AND DATA SERVICES (PAGES 221 - 222)

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Fiona Alderman
Head of Legal & Governance (Monitoring Officer)
George Meehan House, 294 High Road, Wood Green, N22 8JZ

Friday, 25 February 2022

Agenda Item 3

Report for: Cabinet Member Signing – 7 March 2022

Title: Contract Variation for Provision of Mobile Network Voice and Data Services

Report authorised by: Susie Faulkner, Director for Customers, Transformation & Resources

Lead Officer: Paul Dooley, Chief Information Officer, Transformation & Resources

Ward(s) affected: N/A

Report for Key/ Non Key Decision: Key Decision

1 Describe the issue under consideration

1.1 This report seeks Cabinet Member approval under Contract Standing Order 10.02.1 b), where the value is £500,000 (five hundred thousand pounds) or more, and subject to the provisions of Public Contract Regulations 2015 (PCR) 72(1) (b) (i) & (ii) for the extension and variation to the Mobile Network Voice and Data Services contract awarded to EE Ltd.

1.2 The contract award will be for a period of no more than 12 months, with a value of up to £204,000.00, to commence on 1st April 2022. Total aggregated contract value is up to £1,022,000.00, over the 5-year term.

2 Cabinet Member Introduction

2.1 This decision needs to be taken so that the Mobile Network Voice and Data Services contract for the Council is maintained. A new contract will be procured and in place before 1st April 2023.

3 Recommendations

The Cabinet Member is asked:

3.1 To approve the implementation of Contract Standing Order 10.02.1 (b) and Contract Standing Order 16.02 and award the extension and variation for the Mobile Network Voice and Data Services contract to EE Ltd, for a period no longer than 12 months, from 1 April 2022.

3.2 The contract value will not exceed £204,000.00, over the 12-month variation term, with a total aggregated contract value of up to £1,022,000.00.

Haringey LONDON

4 Reasons for decision

4.1 The current contract is due to expire on 30th March 2022. Therefore, this variation is being presented to Cabinet Member to ensure the continuity of all mobile network voice and data services used by the London Borough of Haringey and Homes for Haringey.

4.2 An open tender to procure a new contract for the Council's Mobile Network Voice and Data Services was issued on 19th November 2021, with the provision of a new service scheduled for 1st April 2022. Of the submissions received, none were compliant, and the decision was taken to cancel the procurement, with no new contract being let.

5 Alternative options considered

There are 2 alternative options available:

5.1 **Retender** – not an option as we do not have sufficient time to carry out a compliant procurement.

5.2 **No Action** – do not award a contract extension and allow the existing contract to end. This option has a high level of risk. The implications of not having a contract are:

- Special tariff rates and discounts could revert to increased standard rates
- Possible disruption to mobile network services

6 Background information

6.1 The Council's Mobile Network Voice and Data Services contract was procured through Crown Commercial Services RM1045, Lot 6, and is in the final year of a 4-year contract (2+1+1). The original contract, covering the initial 2-year term, was awarded with a total value of up to £409,000.00. The aggregated contract value, over the 4-year term, is up to £818,000.00.

6.2 Following an unsuccessful tender, as a result of non-compliant bids, additional services under the current contract have become necessary. Contract variations of up to 50% of the original contract value are permitted under current framework terms and Contract Standing Order 10.02.1 b), and Public Contract Regulations 2015 (PCR) 72(1) (b). Details of the tender are included within Appendix 1, Exempt Report, 1. Open Tender Mobile Network Voice and Data Services Contract.

6.3 EE Ltd have offered, from 1st April 2022, the continued provision of all mobile services used by the Council. Current contract service rates will be fixed for the duration of the variation and all lines transitioned to a 30-day rolling notice period. Rates are included within Appendix 1, Exempt Report, 2. Mobile Network Voice and Data tariff rates.

6.4 If the extension to the Mobile Network Voice and Data Services contract is awarded, it provides time to approach the market and procure a contract using the most advantageous and cost-effective route available. The flexibility of the 30-day rolling notice period, rather than a hard coterminous contract end date, allows for a new contract to be awarded and transitioned within the 12-month variation term, without any termination charges.

6.5 There are no associated cost increases in relation to the variation, as service rates from the current contract will be carried over. Cost control strategy will continue to deliver reductions within the terms of the extended contract, with the continued close scrutiny of the account and the use of smart technology.

6.6 Funding for the extension will come from existing Digital Services revenue budget and Homes for Haringey who fund their own usage.

6.7 There are no identified negative equality implications. This is a renewal of an existing contract.

7 Contribution to strategic outcomes

7.1 The Mobile Services used within the council are vital in the fulfilment of the borough plan and align to each of the priorities. They play a vital part in the successful delivery of critical services and outcomes for our residents. They have been a key enabler for home working and have been essential in supporting residents throughout the borough.

8 Statutory Officers comments (Director of Finance (including procurement), Head of Legal and Governance, Equalities)

Finance

8.1 The cost of this 12-month contract extension is not expected to exceed £204,000 with spend expected to remain broadly static as tariffs are being held at current levels for the duration of the extension period. However as stated above Digital Services are seeking opportunities to reduce mobile network spend wherever possible.

8.2 The cost of the contract extension will be funded from existing provision within the Digital Services revenue budget as well as by Homes for Haringey who fund their own usage.

Strategic Procurement

8.3 Contract Standing Order 10.02.1 b) permits the Cabinet to vary a contract where the value is £500,000 (five hundred thousand pounds) or more, and subject to the provisions of Public Contract Regulations 2015 (PCR) 72.

8.4 The variation of this contract is in accordance with CSOs and PCRs and SP have no objection to the variation.

Legal

8.5 The Head of Legal and Governance (Monitoring Officer) has been consulted in the preparation of the report.

8.6 The variation of contract which this report relates to is in accordance with Regulation 72(1)(b) of the Public Contracts Regulations 2015.

8.7 Pursuant to Contract Standing Order 16.02 a Cabinet Member with the relevant portfolio responsibilities has authority to approve the recommendations in the report.

8.8 The Head of Legal and Governance (Monitoring Officer) sees no legal reasons preventing the Cabinet Member for Customer Services, Welfare and the Public Realm from approving the recommendations in the report.

Equality comments

8.9 The council has a Public Sector Equality Duty under the Equality Act (2010) to have due regard to the need to:

- Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act
- Advance equality of opportunity between people who share protected characteristics and people who do not
- Foster good relations between people who share those characteristics and people who do not

8.10 The three parts of the duty apply to the following protected characteristics: age, disability, gender reassignment, pregnancy/maternity, race, religion/faith, sex and sexual orientation. Marriage and civil partnership status applies to the first part of the duty.

8.11 The proposed decision is to approve the final one-year contract extension with EE Ltd for the Councils Mobile Network Services. This will affect a large proportion of Haringey residents, with those who are particularly reliant on the council for essential services particularly impacted, amongst whom there are a disproportionate number of people with protected characteristics.

8.12 The objective of the proposed decision is to ensure continuity of the existing mobile services that link into the successful delivery of the borough plan. This proposal will enable the council to continue to deliver essential services for

all residents. Without this continuity, it is likely that those with protected characteristics or on low incomes would be particularly negatively impacted by the subsequent disruption to council operations.

8.13 As an organisation carrying out a public function on behalf of a public body, EE Ltd will be obliged to have due regard for the need to achieve the three aims of the Public Sector Equality Duty as stated above. Appropriate contract management arrangements will be established to ensure that the delivery of the service does not result in any preventable or disproportionate inequality.

9 Use of Appendices / background documents

Appendix

1. Exempt Report

10 Local Government (Access to Information) Act 1985

Not applicable.

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Report for: Cabinet Member Signing – 7 March 2022

Title: Discretionary Housing Payments Policy

Report authorised by: Susie Faulkner, Director for Customers, Transformation and Resources

Lead Officer: David Graaff, Head of Service Delivery, david.graaff@haringey.gov.uk

Ward(s) affected: All

Report for Key/ Non Key Decision: Key Decision

1. Describe the issue under consideration

1.1 Each year the Department for Work and Pensions (DWP) makes grants available to local authorities for Discretionary Housing Payment (DHP) purposes and a report is taken to Cabinet with an updated DHP policy to reflect the new funding allocation.

1.2 The main objective of the DHP policy to prevent homelessness and to sustain existing tenancies where possible.

2. Cabinet Member Introduction

2.1 We recognise that the lives of Haringey's families on low incomes have become much harder. This will put significant pressure on Haringey's DHP budget in addition to the ongoing impact of previous welfare reform.

2.2 We have reviewed our DHP policy and will do so annually to ensure it has the highest impact.

2.3 Use of our DHP budget is an important means by which the Council aims to assist and protect families threatened with homelessness. We are seeking to focus on supporting people to reduce debt and reducing demand for crisis support, aligned with our objective of preventing homelessness and reducing our reliance on temporary accommodation. With the resources at our disposal, Haringey will ensure that the DHP policy for 2022/23 is administered in a fair and transparent way. We remain committed to doing everything we can to sustain tenancies, prevent homelessness and, where possible, ensure tenants secure more affordable accommodation.

3. Recommendations

The Cabinet Member is asked:

3.1 To approve Haringey's Discretionary Housing Payments Policy 2022/23 (see Appendix A) as the methodology to determine the award of individual

Discretionary Housing Payments during the financial year 2022/23 having regard to the Equalities Impact Assessment (set out in Appendix B).

3.2 At the time of writing this report, the Department for Work and Pensions (DWP) have not confirmed the Discretionary Housing Payment allocation to Haringey for 2022/23. If notification arrives after this Cabinet meeting, Cabinet will be notified of the figure in the Quarter One budget monitoring report.

4. Reasons for Decision

4.1 The DHP Policy must be reviewed and approved every year in line with the changing funding allocated by the DWP.

5. Alternative Options Considered

5.1 None

6. Background Information

6.1 DHPs are short-term awards administered by Local Authorities to help people with housing costs. They can play an important role in sustaining tenancies, preventing homelessness, and enabling tenants to move to more affordable accommodation. Increasingly, DHPs are being given to assist those affected by welfare reform. They can also help the disabled where Housing Benefit is reduced because they have other adults living with them and Foster Carers who require more bedrooms.

6.2 The award of a DHP is discretionary and must be made in accordance with the Discretionary Financial Assistance Regulations 2001 and with the ordinary principles of good decision-making. The Council has a duty to act fairly, reasonably, and consistently.

6.3 The DHP policy supports this decision-making process, enabling fair and consistent decisions to be made in a timely manner.

6.4 The DHP budget is monitored quarterly.

6.5 Haringey has high levels of deprivation and several factors which affect the type and number of requests for DHP including:

- Over 11,000 people on the housing waiting list
- 3% of households in Haringey are overcrowded, with over 1.5 persons per room. This is substantially higher than the statistical neighbour and London averages, and the 4th highest rate of all London boroughs.
- 46% of lone parent households with dependent children have at least 1 room less than the basic standard

- The alternative claimant count is a summation of all UC, JSA, and other job seeking related benefit allowances, used as an estimation for total claimants as UC continues to phase in. Haringey ranks 7th highest in London in terms of alternative claimant count and has seen a 158% increase in claims since March 2020.
- The latest DWP statistics and analysis (December 20) show Haringey ranking 9th highest in London in terms of Universal Credit claimants with over 40,600 claimants. UC claimants has seen a 169% increase in claims since March 2020. Haringey ranks 5th in increase across London since March 2020.
- LIFT data shows there has been a 15% reduction in households in work between November 2019 and November 2020. Economic status data on LIFT shows 59.7% or 22,797 households were out of work, the highest proportion since August 2019.
- Nearly 5,000 low-income households are identified as having a monthly cash shortfall and an increasing proportion are facing rent arrears (4,368). Nearly 3,000 households are in council tax arrears and over 1,000 households are in rent arrears and face a cash shortfall.
- Housing affordability figures show that on average 39% of income is spent on rent but in the private rental sector it is much higher at 51%. Nearly three quarters (73%) of Haringey low-income residents pay unaffordable rent compared to 71% across London. Haringey is 7th highest out of 18 boroughs (sourced from LIFT Living Standard Index work). For private tenants who rent, 97% spend more than a third of their income on rent and for ESA claimants this is true for more than 9 in every 10 residents

6.6 In 2021/22 to date, 1260 awards have been made to 944 different claimants. As at 7/1/2021/2021 DHP spend is £1,328,567 with further commitments so far of £247,731.

6.7 The following table gives a breakdown of the reasons for these awards. These recipients were suffering financial hardship and may have been made homeless without the support from the DHP.

6.8 DHP claims for the past two years are broken down as follows (the figures for 2021/22 are for the period to 7 January 2022, rather than a full year):

	Benefit Cap	Bedroom Tax	Local Housing Allowance	Other (including health reasons)	Total
2020/21 No. of awards	936	206	185	414	1741
2020/21 No. of claimants	439	129	121	258	947
2020/21 Spend	£1,297,363	£158,938	£201,119	£888,761	£2,546,182
2021/22 No. of awards	717	175	184	184	1260
2021/22 No. of claimants	434	138	164	159	895
2021/22 Spend to 7/1/2022	£843,643	£87,408	£183,527	£213,988	£1,328,567

7. Contribution to Strategic Outcomes

7.1 The stated aims of the policy support our corporate priorities, including:

- Sustaining tenancies and preventing homelessness
- Ensuring residents can find and keep good quality employment
- Supporting the vulnerable and elderly to live independent lives
- Creating a fair and equal borough by tackling the underlying factors of poverty and disadvantage
- Early help and intervention

8. Statutory Officers Comments

Finance

8.1 At the time of writing this report the DWP have not confirmed the DHP allocation to Haringey for 2022/23. If notification arrives after this Cabinet meeting, Cabinet will be notified of the figure in the 2022/23 quarter one budget monitoring report.

8.2 As set out in paragraph 8.7 above local authorities can top up their DHP allocation with their own funds. The Council is not intending to spend more than its DWP allocation and therefore additional funds have not been set aside in the 2022/23 Budget and 2022-2027 MTFS Report. Should this position change then it will be raised in the relevant quarterly budget monitoring report.

Legal

8.3 The Assistant Director of Corporate Governance has been consulted in the preparation of this report.

8.4 The Department of Work & Pensions Discretionary Housing Payments (DHP) Guidance Manual which includes the Local Authority Good Practice Guide was updated in February 2021. This manual provides guidance and advice on good practice when a DHP is being considered.

8.5 The legislative framework to Discretionary Housing Payments (DHPs) is set out in sections 69 & 70 of the Child Support Pensions and Social Security Act 2000, Discretionary Financial Assistance Regulations 2001 and the Universal Credit Regulations 2013 (SI 2013/630).

8.6 The Council has power to make Discretionary Housing Payments by virtue of section 69 of the Child Support Pensions and Social Security Act 2000 and regulation 2 of the Discretionary Financial Assistance Regulations 2001. The Council may make a DHP to persons who are entitled to housing benefit or a relevant award of universal credit, and appear to the Council to require some further financial assistance (in addition to the benefit to which they are entitled) in order to meet housing costs. The regulations provide the circumstances in which discretionary housing payments may be made and a limit on the amount that may be paid.

8.7 The regulations give local authorities a very broad discretion in framing a policy for administering DHPs. The Council has a discretion whether to make a DHP in a particular case, the amount of a payment, and the period for or in respect of which they are made. The Council may also review any decision it has made with respect to DHPs and, in certain circumstances, seek to recover payment.

8.8 Decisions about DHPs must be made in accordance with ordinary principles of good decision making and administrative law. There is a requirement to exercise discretion in individual cases, act fairly, reasonably and to apply a consistent approach in dealing with applicants for DHPs. Each case must be assessed on its own merits and the policy must allow for unusual cases to receive proper consideration.

8.9 Under section 70 of the Child Support Pensions and Social Security Act 2000, the Secretary of State has a discretion to give authorities such as the Council such payments as he thinks fit in respect of the cost of making DHPs and the expenses involved in the administration. In addition to this central government contribution, local authorities can top up their DHP funding. In accordance with Article 7 of the DHP (Grants) Order 2001, the Council's total expenditure on DHP cannot exceed the limit of two and a half times the government contribution.

8.10 The DHP (Grants) Order 2001 requires Local Authorities to keep records relating to DHP expenditure.

8.11 Any unspent DHP funding must be returned to the DWP at the end of the financial year.

8.12 This policy acknowledges the legal framework and the guidance and takes account of public law duties when setting out how decisions about DHPs will be made.

Equalities

8.13 The Council has a public sector equality duty under the Equality Act 2010 to have due regard to the need to:

- Eliminate discrimination, harassment and victimisation and any other conduct that is prohibited by or under the Act
- Advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it
- Foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

8.14 The three parts of the duty apply to the following protected characteristics: age, disability, gender reassignment, pregnancy/maternity, race, religion/belief, sex, and sexual orientation. The first part of the duty also applies to the protected characteristic of marriage and civil partnership.

8.15 The purpose of Discretionary Housing Payments is to support residents who are facing housing problems and are vulnerable to becoming homeless. The 2022/23 DHP Policy is largely a continuation of previous policy, though with a decrease in overall funding coming from central government there will be less funding available to award to applicants.

8.16 Individuals who share certain protected characteristic are more likely to make a DHP claim and are therefore more likely to be affected by a reduction in available funding. However, eligibility criteria are applied in every case to ensure that the most vulnerable residents receive DHP funds, regardless of the group they belong to. See the attached EqIA for more information.

8.17 The DHP application process is online for Haringey residents, with offline application forms available on request from Haringey's Customer Service Centres. This does not pose any equalities challenges, provided that the offline option is well signposted and remains easily accessible to those who do not have access to, or do not know how to use, the internet. If this were not the case, there would be a risk that this could exclude some residents from applying for funds, particularly older residents and those with a disability who experience higher rates of digital exclusion.

9. Use of Appendices

- Appendix A – Haringey's Discretionary Housing Payments Policy 2021/22
- Appendix B – EQIA

10. Local Government (Access to Information) Act 1985

10.1 Not applicable.

Discretionary Housing Payments Policy – 2022/23

Introduction and Overview

Discretionary Housing Payments (DHP) are short-term awards administered by Local Authorities using funding from the Department for Work and Pensions (DWP) to help people with housing costs. They can play an important role in sustaining tenancies, preventing homelessness, and enabling tenants to move to more affordable accommodation. Increasingly DHPs assisting those adversely affected by welfare reform.

To qualify for a DHP, the claimant must have a rent liability, require further financial assistance with their housing costs, and be entitled to Housing Benefit or a Universal Credit Housing Costs element.

DHPs may cover part or all of a shortfall in a tenant's eligible rent or provide the rent-in-advance and damage deposit a tenant may need to secure a tenancy. DHPs may be awarded as a one-off payment or as a series of payments.

The following costs cannot be covered under a claim for a DHP:

- Ineligible service charges
- Increases in rent that are due to outstanding rent arrears
- Certain sanctions and reductions in Benefit
- Council Tax liabilities incurred under the Council Tax Reduction scheme from 2013 onwards

Haringey's DHP scheme

Haringey Council follows these principles in administering the local DHP scheme to make sure the right people receive the right support:

- All applications will be treated fairly and consistently and assessed on their individual merits
- Applications will be processed in a timely manner, throughout the year

DHPs will be awarded in those circumstances where additional help will have a significant effect in reducing the risk of homelessness, alleviating hardship, or alleviating difficulties that may be experienced in the transition from long-term benefit dependence into work. In addition, applications will be considered against the Council's objectives of:

- Sustaining tenancies and preventing homelessness
- Safeguarding Haringey residents in their own homes
- Encouraging and sustaining people in employment
- Helping people who are trying to help themselves
- Keeping households together
- Supporting victims of domestic violence to move to a place of safety
- Supporting the vulnerable and elderly in the local community
- Helping customers through personal and difficult events
- Supporting young people in the transition to adult life
- Supporting move on from supported housing, residential settings, or institutions

- Promoting good educational outcomes for children and young people
- Alleviating poverty

Our aim will be to strengthen the financial independence of all claimants and reduce the need for ongoing DHP support.

DHP Awards

The Council will use the DHP budget to support those residents who are most in need and will give priority to applications from the following households:

Households Affected by the Benefit Cap

- Households needing to move to alternative, lower-cost private or social rented accommodation and are working proactively (e.g., with the Housing Needs Team) to improve their situation
- Households needing to move to alternative, lower cost accommodation but are unable to do so immediately for reasons of health, education, or child protection
- Households residing in temporary accommodation (provided by, or on behalf of, Haringey Council) and have either been told that they will be able to remain in the accommodation/area, or they are awaiting an offer of alternative temporary accommodation procured at a lower cost
- Households residing in temporary accommodation (provided by, or on behalf of, Haringey Council) and have been assessed as being particularly vulnerable and needing to remain in the area
- Households living in social rented housing

Households Affected by Social Rented Sector Size Criteria

- Households that include a person with a disability and are living in 'significantly adapted' accommodation
- Households that include a disabled child who is unable to share a bedroom because of their severe disabilities, where regulations do not allow for the extra bedroom
- Households that include a disabled child and are living in accommodation that has been adapted to meet the child's needs, where regulations do not allow for the extra bedroom
- Households including someone who has a severe and persisting disability which means that they are dependent on the care and support of relatives and friends who are living in the local community, and there is no suitable accommodation available within the local area to which they can transfer
- Households whose Housing Benefit is restricted by the Size Criteria, but that restriction will soon be lifted because the claimant (and their partner if they have one) will reach the age at which they will be able to claim Pension Credit.
- Households whose Housing Benefit is restricted by the Size Criteria, but that restriction will soon be lifted because one or more of their children will soon reach an age when they are not expected to share a bedroom

- Single people or couples who are pregnant and living in a two-bedroom home but whose Housing Benefit is restricted by the Size Criteria to a one-bedroom home, but that restriction will soon be lifted when the baby is born
- Households with exceptional need, which are actively engaging in seeking to downsize to accommodation that matches their need.

Foster Carers

Foster Carers are allowed one extra bedroom under the size criteria rules. Some may be caring for siblings, or for two or more unrelated foster children, and need more bedrooms. National standards require a foster child over the age of three to have their own room. A DHP may be awarded to help cover any reduction in housing benefit due the additional rooms that are required.

Households affected by high rent levels

- Households who need security deposits to move to alternative accommodation
- Households experiencing shortfalls between their rent and the Local Housing Allowance

Assessment of applications

In deciding whether to award a DHP, the Council will assess each application on its merits and consider equality considerations, strategic objectives and fiduciary duties including:

- The impact that not awarding a DHP is likely to have on the claimant and the potential impact on other council resources and services, especially homelessness, social care, household support and health
- The size of any shortfall that exists between the amount the claimant is receiving in housing costs (from Housing Benefit or Universal Credit) and the eligible housing costs for which they are liable, together with the reasons for this shortfall
- The financial circumstances (income and expenditure, savings, capital, and indebtedness) of the claimant, their partner and anyone else living in their home
- Any special needs or health and social problems that the claimant and/or their household have, and what impact these have on their housing and financial situation
- The impact that moving home and/or changing schools is likely to have on the household and the educational outcomes of any young people in the household
- The reasons why the circumstances of the claimant and their household should be considered ‘exceptional’ compared to other people,
- The length of time for which a DHP is being sought
- Any steps the claimant has taken to reduce their rental liability
- The nature of any contact the claimant has had with Housing Needs Team and their engagement with their personal housing plan
- The amount of money remaining in the DHP budget
- The extent to which the claimant has complied with previous conditions.

After the Council has considered the claimant’s needs and circumstances, it will decide how much to award. This may be any amount to cover that gap between the rental liability and

payment for Housing Benefit/Universal Credit, or a lump sum to cover a deposit. The weekly DHP award cannot exceed the weekly eligible rent for the claimant's home.

The award of a DHP does not guarantee that a further award will be made again later, even if the claimant's circumstances remain unchanged.

Claiming a DHP

A request for a DHP can be made using the DHP application form available via the My Account portal. A written request can also be accepted.

https://www.haringey.gov.uk/contact/my-account

A claim for a DHP will be considered from the date a DHP is requested, provided that all supporting information and documentation is received by the Council within one month of that request.

If the Council requires additional information and evidence to assess the claim, it will request this from the claimant in writing, electronically or verbally (over the telephone, face to face or by visit). The claimant must provide this information and documentation within one month of the date of the request.

If the claimant does not provide the information and documentation on time, the Council will decide based on the information it already holds, including the information held on its Housing Benefit/CTRS computer system. Additional time may be allowed where there are exceptional circumstances.

Award decisions

In considering an award of DHP the Council will look at other sources of funding available to the claimant and will offer alternative funding routes where this is appropriate.

Award decisions will be made in a timely manner after all the information required has been received. The claimant will be notified in writing of the outcome of the DHP claim within 14 days of receipt of the claim and supporting documentation, or as soon as possible after that. Where the claim is successful, the Council's decision letter will include the following:

- The reason for the award
- The amount awarded
- The period of the award
- To whom the DHP will be paid
- The claimant's duty to report any changes in circumstances
- Any conditions associated with the award

Where a claim is unsuccessful, the Council's decision letter will include an explanation setting out the reasons the decision has been reached and details of the right of review.

The length of a DHP award will be based on the individual circumstances of each claimant but will consider the date that the tenancy and/or notice period expires.

As an award can only be made for the current financial year, any award that is made for the remainder of 2022/23 will have to be followed by a new application for the next financial year even if the claimant's circumstances remain unchanged.

Right to request a review

As a DHP is not a payment of Housing Benefit or Universal Credit, it is not subject to the appeals process that operates under those schemes.

However, claimants can request a review of:

- a decision to refuse to award a DHP,
- a decision to award a reduced amount,
- a decision not to backdate an award for DHP or,
- a decision to seek recovery of an overpayment of a DHP.

This must be made in writing, within one month of when the notification was issued, and set out the reasons for requesting a review. A DHP Review Panel, will review all the evidence held and will aim to inform the claimant of the outcome within 14 days or as soon as possible after that.

The DHP Review Panel's decision will be final. In cases of alleged maladministration by the Council, the claimant should follow the Council's complaints process. If a claimant is still unhappy, they have a right to contact the Local Government Ombudsman.

Fraud

The Council is committed to tackling and preventing fraud in all its forms. If a claimant attempts to claim a DHP by making a false declaration or providing false evidence or statements, they may have committed an offence under the Theft Act 1968. Where the Council suspects that fraud may have occurred, it will investigate the matter as appropriate and this may lead to criminal proceedings.

Debt advice

Anyone experiencing debt problems will be signposted to local debt advice agencies (including the Citizens Advice Bureau) for free, confidential, impartial advice.

Policy review

This policy will be reviewed annually or in the event of any legislative changes, trends or other factors that impact on its effectiveness.

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Equality Impact Assessment (EQIA)

The Equality Impact Assessment (EQIA) form is a template for analysing a policy or proposed decision for its potential effects on residents with protected characteristics covered by the Equality Act 2010.

The council has a Public Sector Equality Duty under the Equality Act (2010) to have due regard to the need to:

- Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act
- Advance equality of opportunity between people who share protected characteristics and people who do not
- Foster good relations between people who share those characteristics and people who do not

The three parts of the duty apply to the following protected characteristics: age, disability, gender reassignment, pregnancy/maternity, race, religion/faith, sex and sexual orientation. Marriage and civil partnership status applies to the first part of the duty.

Although it is not enforced in legislation as a protected characteristic, Haringey Council recognises the profound and far-reaching impacts of socioeconomic disadvantage treats socioeconomic status as a local protected characteristic.

1. Responsibility for the Equality Impact Assessment

Name of proposal:	**Extension of Discretionary Housing Payment Policy 2022/2023**
Service Area:	**Corporate & Customer Services / Revenues and Benefits**
Officer Completing Assessment:	**Jim Brady**
Equalities/HR Advisor:	**[Type answer here].** **TBA**
Cabinet meeting date (if applicable):	**[Type answer here].** **March 2022**
Director/Assistant Director	**Susie Faulkner**

2. Executive summary

Please complete this section *after* completing the rest of the form and summarise:

- The policy proposal, its aims and objectives, the decision in consideration. Please focus on **the change** that will result from this decision.

- Results of the analysis: positive and negative equality impacts
- Mitigations that will be taken to minimise negative equality impacts (if relevant)
- Next steps (this may be future consultation or stages of the project)

The Customers, Transformation and Resources Service has produced a report relating to Discretionary Housing Payment (DHP) Awards for 2022/2023, asking Members to approve Haringey's Discretionary Housing Payments Policy for 2022/23 as the methodology to determine the award of individual Discretionary Housing Payments during the financial year 2022/23

The substance of the policy is unchanged from the year 2021/2022.

The Discretionary Housing Payment policy will be administered by the Council to provide financial assistance not covered by the Housing Benefit and Universal Credit regulations in order to help tenants who are at risk of homelessness to meet their housing costs. It is therefore an additional tool to enable the Council to play an important role in helping to sustain tenancy, prevent homelessness and, where applicable, by helping tenants to move to more affordable accommodation. The policy is an integral part of how the Council administers the Welfare Reform Act 2012 while at the same time ensuring that the most vulnerable are afforded effective protection and the impact on groups protected by the Equality Act are identified and mitigated.

Discretionary Housing Payments have been part of Housing Benefit administration for many years, but have taken a greater role in preventing homelessness following government Welfare Reform changes to major Housing Benefit Regulations, such as the introduction of Local Housing Allowance (Restriction on how much Housing Benefit can be paid to private tenants), the Benefit Cap (currently restricting the total amount of benefit that can be awarded to any individual to £296.35 per week for single people and £442.31 per week for others, and the Social Sector Size Criteria (otherwise known as the Bedroom Tax – a restriction on Housing Benefit for tenants of Social Landlords, who have more bedrooms than they need).

Analysis of the spend on Discretionary Housing Payment for the year to 2021/2022 to date has shown that the effect of the policy on groups with protected characteristics is either positive or neutral. No Negative impacts have been identified.

Should there be a need to revise the policy for 2023/2024, any impacts identified after the approval of the current proposed policy will be addressed for that policy.

3. Consultation and engagement

3a. How will consultation and/or engagement inform your assessment of the impact of the proposal on protected groups of residents, service users and/or staff?

This is an extension of an existing policy for a further year. No changes have been made to the policy, so no further consultation is proposed.

3b. Outline the key findings of your consultation / engagement activities once completed, particularly in terms of how this relates to groups that share the protected characteristics

No consultation has been proposed for this policy extension.

4. Data and Impact Analysis

Please consider how the proposed change will affect people with protected characteristics.

4a. Age

Data
Borough Profile[1]
56,718: 0-17 (21%)
72,807: 18-34 (27%)
68,257: 35-49 (25%)
44,807: 50-64 (17%)
28,632: 65+ (11%)

Target Population Profile
0-17 (0%)
18-34 (25%)
35-49 (43%)
50-64 (26%)
65+ (6%)

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

Analysis of the 2021/22 allocation of Discretionary Housing Payments has been undertaken and where data is available, this has been used to populate the figures above.

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal as a result of a need related to their protected characteristic?

[1] Source: State of the Borough

- Where the data is available, our figures show that 6% of successful applicants were over 65%, 69% were between 35-65, 25% were between 18-34. People awarded Discretionary Housing Payment and over 65 are not proportionate to the general population as they tend to be less affected by welfare reforms than working-age people. For that reason, working-age people awarded Discretionary Housing Payment are proportionately more than the general population. Common reasons for this are listed below.
- Housing Benefit is restricted for single claimants aged under 35 who rent from a private landlord. Their benefit is restricted to the rate allowed for shared accommodation. As such they are more likely to claim additional funds from Discretionary Housing Payment. People between 35-65 are more likely to have children, and be in temporary accommodation, and therefore affected more by the Benefit Cap. Those with adult children leaving home, may be more affected by the Bedroom Tax.
- Older people (though not pensioners who are exempt) are more likely to be impacted by restrictions under Size Criteria rules as they may be living in the former family home and have more bedrooms than it is deemed necessary. This group are also likely to make claims for additional funds as a result of a restriction on their benefit.
- Limited funds in the Discretionary Housing Payment budget for 2022/23 means that these groups are more likely to be affected by restricted amounts of Discretionary Housing Payment funding being awarded. They will be financially impacted and this could have a direct impact on their ability to remain in their current home, and/or on their disposable income.
- It is recognised that certain people may find it difficult to find work due to their age; they will continue to be signposted to employment and re-skilling programmes that provide targeted support to find work. These include focused training provided by Haringey Adult Learning Services, CONEL and other Haringey based providers.
- Where people have been affected by multiple welfare reform changes (such as the Benefit Cap and the Size Criteria changes) they will continue to receive individual assistance including one-to-one interviews with colleagues from Housing Services and JobCentrePlus and direct referrals to support providers such as Citizens Advice Haringey or through The Bridge Renewal Trust, Haringey Council's Strategic Partner for the Voluntary and Community Sector (VCS).

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
  - Those aged 35 and below, as well as older people (up to the age of 65) are more likely to be claimants affected by welfare reforms, and are therefore more likely to benefit from continued Discretionary Housing Payment funding.
  - Impact Result is Positive

4b. Disability[2]

Data
Borough Profile [3]

4,500 people have a serious physical disability in Haringey.
19,500 aged 16-64 have a physical disability this equates to approximately 10% of the population aged 16-64.
1,090 people living with a learning disability in Haringey.
4,400 people have been diagnosed with severe mental illness in Haringey.

Target Population Profile

Of existing Discretionary Housing Payment recipients, 23% receive a state benefit which indicates a disability

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

Analysis of the 2021/22 allocation of Discretionary Housing Payments has been undertaken and where data is available, this has been used to populate the figure above.

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- Disabled people are more likely to live on low incomes and be more likely to request assistance from the Discretionary Housing Payment budget, so successful claims from disabled people are likely to be proportionately higher than the general population. At least 23% of applicants in 2021/22 are known to receive a benefit which indicates a disability.
- Where restrictions are in place and yet there is a care need for an additional bedroom, applications are carefully considered.
- It is recognised that this group may find it difficult to find work and as such are supported appropriately in terms of employment and re-skilling programmes.
- No individuals whose access to the internet is restricted by their disability will be prevented from making a Discretionary Housing Payment claim as there will be a paper-based alternative available.

[2] In the Equality Act a disability means a physical or a mental condition which has a substantial and long-term impact on your ability to do normal day to day activities.
[3] Source: 2011 Census

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
  - Those who have a disability are more likely to be claimants and are therefore more likely to benefit from continued Discretionary Housing Payment funding.
  - Impact Result is Positive

4c. Gender Reassignment[4]

Data

Borough Profile

There is no robust data at Borough level on our Trans population, however the central government estimates that there are approximately 200,000-500,000 Trans people in the UK. Assuming an average representation, this would mean between 800 and 2000 Haringey residents are Trans.[5]

Target Population Profile

- Discretionary Housing Payment applicants do not have to provide any details relating to gender reassignment. There is no evidence to suggest that gender reassignment has been a relevant factor in awarding Discretionary Housing Payments, nor will it be in the future. We have no reason to believe that Trans individuals will be disproportionately impacted by the Discretionary Housing Payment Policy.

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

- We have no local data from existing Discretionary Housing Payment awards on this characteristic

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- Data on gender reassignment is not collected among claimants. There is no data to suggest that there will be a disproportionate impact on this protected characteristic group, however the service will ensure that the same eligibility

[4] Under the legal definition, a transgender person has the protected characteristic of gender reassignment if they are undergoing, have undergone, or are proposing to undergo gender reassignment. To be protected from gender reassignment discrimination, an individual does not need to have undergone any specific treatment or surgery to change from one's birth sex to ones preferred gender. This is because changing ones physiological or other gender attributes is a personal process rather than a medical one.

5 Trans is an umbrella term to describe people whose gender is not the same as, or does not sit comfortably with, the sex they were assigned at birth.

criteria is applied in all cases, to minimise any disproportionately negative impact on this group.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
  - Impact Result is Neutral

4d. Marriage and Civil Partnership

Data

Borough Profile [6]

Divorced or formerly in a same-sex civil partnership which is now legally dissolved: (8.2%)
In a registered same-sex civil partnership: (0.6%)
Married: (33.3%)
Separated (but still legally married or still legally in a same-sex civil partnership): (4.0%)
Single (never married or never registered a same-sex civil partnership): (50.0%)
Widowed or surviving partner from a same-sex civil partnership: (3.9%)

Target Population Profile

- Data on marriage and civil partnership is not collected among claimants. There is no data to suggest that there will be a disproportionate impact on people in marriages or people in civil partnerships.

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

- We have no data from existing Discretionary Housing Payment awards on this characteristic

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- Housing Benefit and Discretionary Housing Payment applicants do not have to provide any details relating to marriage and civil partnership.
- Single males and single females are also impacted groups as they are more likely to move between residences more frequently and live in relatively expensive private sector accommodation which cannot always be funded

[6] Source: 2011 Census

purely on Housing Benefit and as such a rent top-up is requested from the DHP budget. 20% of applicants are male and single. 70% of applicants are female and single.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
    - The impact is Neutral for people who are married or in civil partnerships
    - The impact is Positive for Single People.

4e. Pregnancy and Maternity

Data

Borough Profile [7]

Live Births in Haringey 2019: 3646

Target Population Profile

- We do not collect information about claimants' maternity status so the full impact on this characteristic is not known, however we have used the data we hold to make a consideration of the impact.
- What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?
    - It is estimated that within the Housing Benefit group, pregnant women are more likely to live on low incomes and require larger accommodation, as such they are more likely to request assistance from the Discretionary Housing Payment budget.
    - Where appropriate there will continue to be targeted signposting in place for those needing support with children through Children's Centres, The Bridge Renewal Trust, Haringey Council's Strategic Partner for the Voluntary and Community Sector (VCS) and referrals to the Sure Start Maternity Grant department of the DWP.
    - In addition claimants can be signposted to the following: The Government's "Healthy Start" scheme which provides vouchers to pregnant women and those with children under four, they can be exchanged for food, fruit and formula milk.
    - Haringey has a number of Children's Centres located across the borough bringing together a range of services such as childcare, family support, health and education and information on local services.
    - Women who are pregnant or on maternity leave are unable to work for a set period of time and are likely to be in receipt of statutory maternity pay which may help to supplement their income.

Detail the findings of the data.

[7] Births by Borough (ONS)

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- Pregnant women are more likely to live on low incomes and claim Discretionary Housing Payment, meaning that this group may be disproportionate to the general population but is more likely to benefit from continued Discretionary Housing Payment funding.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
  - Impact Result is Positive

4f. Race

Data

Borough Profile [8]

Arab: **0.9%**
Any other ethnic group: 3.9%

Asian: **9.5%**
Bangladeshi: 1.7%
Chinese: 1.5%
Indian: 2.3%
Pakistani: 0.8%
Other Asian: 3.2%

Black: **18.7%**
African: 9.0%
Caribbean: 7.1%
Other Black: 2.6%

Mixed: **6.5%**
White and Asian: 1.5%
White and Black African:1.0%
White and Black Caribbean: 1.9%
Other Mixed: 2.1%

White: **60.5% in total**
English/Welsh/Scottish/Norther Irish/British: 34.7%

[8] Source: 2011 Census

Irish: 2.7%
Gypsy or Irish Traveller: 0.1%
Other White: 23%

Target Population Profile
Arab: **2%**
Asian: **0%**
Black: **48%**
Mixed: **11%**
English/Welsh/Scottish/Norther Irish/British: 22%
Other White: 17%
What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

Analysis of the 2021/22 allocation of Discretionary Housing Payments has been undertaken and where data is available, this has been used to populate the figure above.

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- Of those who have declared their ethnicity, evidence held suggests that people from minority ethnic groups are more likely to live on low incomes and more likely to request assistance from the Discretionary Housing Payment budget. In 2021/22, where the data was available, 48% of applicants (whose ethnicity is recorded) were Black, 22% were White British, 17% were White Other, 11% have mixed ethnicity, 0% were Asian and 2% were from Arab backgrounds.
- Claimants will continue to be signposted to employment and skills training programmes to enhance employment opportunities, especially in the east of the Borough where there is a high concentration of minority ethnic groups and high levels of deprivation.
- Relationships have been built with local JobCentrePlus sites where claimants can receive information about opportunities relating to both employment and skills development. There is also access to budgeting loans to help with any work-related costs (such as clothing or equipment). These will continue going forward.

Impacts
- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).

- Those from a minority ethnic background are more likely to be claimants, and are therefore more likely to benefit from continued Discretionary Housing Payment funding.
- Impact Result is Positive

4g. Religion or belief

Data

Borough Profile [9]
Christian: 45%
Buddhist: 1.1%
Hindu:1.9%
Jewish:3%
Muslim: 14.2%
No religion: 25.2%
Other religion: 0.5%
Religion not stated: 8.9%
Sikh: 0.3%

Target Population Profile
The service does not hold data in relation to religious belief.

What data will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

- Discretionary Housing Payment applicants do not have to provide any details relating to religion. There is no evidence to suggest that religion has been a relevant factor in awarding Discretionary Housing Payment ,nor will it be in the future. We have no reason to believe that individuals of any specific faith (or none) will be disproportionately impacted by the Discretionary Housing Payment Policy.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
    - Impact Result is Neutral

4h. Sex

Data
Borough profile [10]
Females: (50.5%)
Males: (49.5%)

[9] Source: 2011 Census
[10] Source: 2011 Census

Target Population Profile

Of existing Discretionary Housing Payment recipients, 77% are female and 23% are male.

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

Analysis of the 2021/22 allocation of Discretionary Housing Payments has been undertaken and where data is available, this has been used to populate the figures above.

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- All People will continue to be subject to the same eligibility criteria and people of any sex will see the same overall impact of the reduced funding levels.
- The majority of claimants who will be affected are female, in particular lone female parents who are a predominant group of Housing Benefit claimants. Where the data was available, 77% of applicants in 2021/22 were female.
- Limited funds in the Discretionary Housing Payment budget for 2022/23 means that these groups may be more likely to be affected by restricted amounts of Discretionary Housing Payment funding being awarded. They will be financially impacted and this could have a direct impact on their ability to remain in their current home, and/or on their disposable income
- Female claimants who are affected by the benefit cap will have access to job centre advisors to be signposted to the various appropriate women specific employment and skills development initiatives in the borough, in addition to generic programmes to help people into work e.g. Haringey Adult Learning Services (HALS) and the College of North East London (CONEL)
- Where appropriate there will continue to be targeted signposting in place for local groups offering support that is sex specific, via The Bridge Renewal Trust, Haringey Council's Strategic Partner for the Voluntary and Community Sector (VCS)
- All groups impacted by the Benefit CAP will continue to have targeted support offered to them in terms of housing, childcare and training opportunities.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).
    - Impact Result is Positive

4i. Sexual Orientation

Data

Borough profile [11]

3.2% of London residents aged 16 or over identified themselves as lesbian, gay or bisexual in 2013. In Haringey this equates to 6,491 residents.

Target Population Profile

- Discretionary Housing Payment applicants do not have to provide any details relating to sexual orientation.

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

- Discretionary Housing Payment applicants do not have to provide any details relating to sexual orientation. There is no evidence to suggest that sexual orientation has been a relevant factor in awarding Discretionary Housing Payment, nor will it be in the future. We have no reason to believe that individuals of any specific sexual orientation will be disproportionately impacted by the Discretionary Housing Payment Policy.

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

- We have no reason to believe there is any discrimination or disproportionality in the awards of Discretionary Housing Payment in terms of sexual orientation.
- LGBT+ people are more likely to be vulnerable to becoming homeless and to move between residences more frequently and live in relatively expensive private sector accommodation which cannot always be funded purely on Housing Benefit and as such, a rent top-up is requested from the Discretionary Housing Payment budget. It has been reported that the LGBT Foundation has seen a large increase in enquiries relating to Housing.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).

[11] Source: ONS Integrated Household Survey

- Impact Result is likely to be Positive or Neutral

4j. **Socioeconomic Status (local)**

Data

Borough profile

Income[12]

Haringey is the 4th most deprived in London as measured by the IMD score 2019 (where 1 = most deprived). The most deprived LSOAs (Lower Super Output Areas or small neighbourhood areas) are more heavily concentrated in the east of the borough.

22.4% of the population in Haringey aged 16-65 receive Universal Credit as of March 2021.

29% of employee jobs in the borough are paid less than the London Living Wage.

The average wage of someone working in Haringey is £30,452 per year and the average resident wage (including people who travel out of the borough for work) is £35,769 per year.

Educational Attainment[13]

While Haringey's proportion of students attaining grade 5 or above in English and Mathematics GCSEs is higher than the national average, it performs worse than London.

5.5% of Haringey residents have no qualifications.

Target Population Profile

20,718 Housing Benefit Recipients in January 2022

39,669 Universal Credit Recipients in November 2021

What data sources will you use to inform your assessment of the impact of the proposal on people under this protected characteristic?

Analysis of the 2021/22 allocation of Discretionary Housing Payments has been undertaken and where data is available, this has been used to populate the figures above.

Detail the findings of the data.

a) Might members of this group be disproportionately affected by the proposal due to overrepresentation? How does this compare with the wider demographic profile of the Borough?
b) Might members of this group be disproportionately affected by this proposal by dint of a need related to their protected characteristic?

[12] Source: Annual Survey of Hours and Earnings, ONS, 2019
[13] Source: Annual Population Survey 2019 (via nomis)

Recipients of Discretionary Housing Payment must also receive either Housing Benefit or the Housing Element of Universal Credit. This means that recipients of Discretionary Housing Payment are dependent on state assistance for their Housing Costs due to low incomes. As such they are among the most socially disadvantaged people in the borough. Discretionary Housing Payment enables people who face restrictions in the amount of rent paid through Housing Benefit or Universal Credit, to receive a top-up of funds which enables them to pay their rent and remain in their homes and not face homelessness. People who are able to afford their rent, cannot lawfully receive Discretionary Housing Payment, so socially disadvantaged people make up the entirety of Discretionary Housing Payment recipients. Though this makes socially disadvantaged people disproportionately benefit from this policy, that is the sole reason that funding has been made available.

One additional socio-economic area of Discretionary Housing Payment awards is also discussed below.

Tenancy Type

- Analysis from 2021/22 suggests that Temporary Accommodation cases account for a disproportionate number of Discretionary Housing Payment. Residents in this type of accommodation are often particularly vulnerable. In addition, this is because rents are expensive in Temporary Accommodation, and Benefit Cap is likeliest to affect tenants in Temporary Accommodation.

Impacts

- Consider whether the proposed policy/decision will have positive, neutral, or negative impacts (including but not limited to health impacts).

  - Impact Result is Positive

5. Key Impacts Summary

5a. Outline the key findings of your data analysis.

- The analysis undertaken shows that the existing policy has been effective in assisting many people from disadvantaged groups to be able to pay their rent and remain in their homes.

5b. Intersectionality

- Many proposals will predominantly impact individuals who have more than one protected characteristic, thereby transforming the impact of the decision.
- This section is about applying a systemic analysis to the impact of the decision and ensuring protected characteristics are not considered in isolation from the individuals who embody them.

  Please consider if there is an impact on one or more of the protected groups? Who are the groups and what is the impact?

- Groups who share more than one protected characteristic and are more likely to claim Discretionary Housing Payment and therefore benefit from continued Discretionary Housing Payment funding. People from ethnic minorities, women and disabled and vulnerable people are more likely to live on low incomes and face more difficulties in achieving better incomes. Some groups which may be affected and cross multiple groups include:

    - Ethnic Minority women
    - Women with disabilities
    - Pregnant ethnic minority women
    - Young women
    - Older people with disabilities

5c. Data Gaps

Based on your data are there any relevant groups who have not yet been consulted or engaged? Please explain how you will address this

Based on existing patterns of Discretionary Housing Payment awards, no further groups have been excluded from consideration for the continuation of this policy.

6. Overall impact of the policy for the Public Sector Equality Duty

Summarise the key implications of the decision for people with protected characteristics.

In your answer, please consider the following three questions:

- Could the proposal result in any direct/indirect discrimination for any group that shares the relevant protected characteristics?

- Will the proposal help to advance equality of opportunity between groups who share a relevant protected characteristic and those who do not?

- Will the proposal help to foster good relations between groups who share a relevant protected characteristic and those who do not?

- The funding of Discretionary Housing Payments from Government, gave Haringey £1,682,678 to spend in 2021/22. For 20212/2023 this will be INSERT.
- The Council will have to be considerate of policy when deciding which applications to award. Officers will do this by assessing the exceptionality of the application, the severity of the financial circumstances of the applicant, the likely timeframe that Discretionary Housing Payment will be needed by the applicant and the steps being taken by the applicant to improve their financial situation. We will also make use of available resources to signpost applicants to sources of further assistance, which may for example help them with budgeting, or to find employment, or better paid employment, or assist them with finding

cheaper accommodation, and therefore be less reliant on the need to receive financial assistance from Discretionary Housing Payments

- The Discretionary Housing Payment application process is online for Haringey residents, with offline application forms available on request from Haringey's Customer Service Centres. This does not pose any equalities challenges, as the offline option is well signposted and remains easily accessible to those who do not have access to, or do not know how to use, the internet. If this were not the case, there would be a risk that this could exclude some residents from applying for funds, particularly older residents and those with a disability who experience higher rates of digital exclusion.
- The limited funds may lead to reduced values of awards, reduced length of awards, and more comprehensive assessment of whether conditions set against awards have been met, when it comes to renewing awards. This would not be expected to impact or discriminate disproportionately towards any particular group of people with protected characteristics.
- People from groups with protected characteristics are most likely to benefit from the Discretionary Housing Payments, as they are most likely to be affected by welfare reforms and be on the lowest incomes. This policy reduces the risk of people from groups with protected characteristics being evicted, and advances their prospects of retaining their homes and local connections.
- By working with people who receive Discretionary Housing Payments to improve their circumstances, the Council aims to meet its objectives to reduce poverty and deprivation.

7. Amendments and mitigations

7a. What changes, if any, do you plan to make to your proposal because of the Equality Impact Assessment?

Further information on responding to identified impacts is contained within accompanying EQIA guidance

Please delete Y/N as applicable

No major change to the proposal: the EQIA demonstrates the proposal is robust and there is no potential for discrimination or adverse impact. All opportunities to promote equality have been taken. If you have found any inequalities or negative impacts that you are unable to mitigate, please provide a compelling reason below why you are unable to mitigate them

No – No major change to policy is being proposed. The EQIA demonstrates the proposal is robust and there is no potential for discrimination or adverse impact. All opportunities to promote equality have been taken.

Adjust the proposal: the EQIA identifies potential problems or missed opportunities. Adjust the proposal to remove barriers or better promote equality. Clearly set out below the key adjustments you plan to make to the policy. If there are any adverse impacts you cannot mitigate, please provide a compelling reason below **Y/N**

No – No major change to policy is being proposed. The EQIA identifies no potential problems or missed opportunities.

Stop and remove the proposal: the proposal shows actual or potential avoidable adverse impacts on different protected characteristics. The decision maker must not make this decision. **Y/N**

No – No major change to policy is being proposed. The EQIA identifies no actual or potential avoidable adverse impacts on different protected characteristics.

7b. What specific actions do you plan to take to remove or mitigate any actual or potential negative impact and to further the aims of the Equality Duty?

Action:

No negative impacts have been identified as a result of this policy.

Lead officer: Not applicable as no changes are proposed

Timescale: Not applicable as no changes are proposed

Please outline any areas you have identified where negative impacts will happen because of the proposal, but it is not possible to mitigate them.

Please provide a complete and honest justification on why it is not possible to mitigate the:
Not applicable as no negative impacts have been identified

7. Ongoing monitoring

Summarise the measures you intend to put in place to monitor the equalities impact of the proposal as it is implemented.

- Who will be responsible for the monitoring?
- What the type of data needed is and how often it will be analysed.
- When the policy will be reviewed and what evidence could trigger an early revision
- How to continue to involve relevant groups and communities in the implementation and monitoring of the policy?

Monitoring of the awards made for Discretionary Housing Payment will continue in the year 2022/23. The same data as is currently collected will continue to be collected. No new data collection is being proposed.

The policy will be reviewed in time for the 2023/2024 draft of the policy in early 2023**.**

The policy will be made available on the Haringey Website and we welcome any comments regarding it, and will review any comments made by interested parties for future policy enhancement.

Date of EQIA monitoring review: **Quarter 4 2022/2023.**

8. Authorisation

EQIA approved by (Assistant Director/ Director) **Susie Faulkner**

Date **[Type answer here].**

9. Publication

Please ensure the completed EQIA is published in accordance with the Council's policy**.**

Please contact the Policy & Strategy Team for any feedback on the EQIA process.

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Report for: Cabinet Member Signing – 7 March 2022

Title: Flood Water Management Investment Plan

Report authorised by: Stephen McDonnell, Director of Environment and Neighbourhoods

Lead Officer: Ann Cunningham, Head of Highways & Parking, 020 8489 1355, Ann.Cunningham@haringey.gov.uk, and Peter Boddy, Highways and Traffic Manager, 02084891765, Peter.Boddy@haringey.gov.uk

Ward(s) affected: All

Report for Key/ Non-Key Decision: Key Decision

1 Describe the issue under consideration

1.1 It is widely recognised that the combined effects of climate change and continuing urban development will give rise to increased flood risk. In London alone, there are many properties that are deemed at risk of flooding. Haringey as well as several other London boroughs experienced flooding from extreme rainfall on two occasions in July 2021.

1.2 Haringey is responsible for taking the lead in managing flood risk from surface water, groundwater, reservoir, rivers, and some of the smaller watercourses. In 2010, the Flood and Water Management Act came into effect, and this required the Council to take on the role of 'lead local flood authority' (LLFA) for the Haringey area.

1.3 It is not possible to completely stop flooding, but steps can be taken to reduce the effect through measures including that of highways drainage resilience works and schemes to prevent unmanaged flooding.

1.4 The Flood Water Management Investment Plan (FWMIP) sets out the capital investment programme for 2022/2023. Appendix 1 sets out the proposed allocation of schemes within the overall programme. This programme has been developed to meet the objectives in the Haringey Local Flood Risk Management Strategy.

1.5 The schemes proposed in the Flood Water Management Investment Plan are a 'living document' of proposals which are developed as the Council understands the various issues that have an impact on flooding.

2 Cabinet Member Introduction

2.1 I am pleased to introduce this report that sets out an increase in investment in flood prevention and drainage improvement schemes for Haringey.

2.2 The extreme rainfall events in July caused damage to properties in Haringey and across London. It served as a reminder – if it were needed – that London's Victorian sewer system was not designed, or built, to deal with the volume of water that it has been asked to cope with and that extreme weather events – a consequence of the climate emergency – are becoming increasingly common.

2.3 In response to these events, we accelerated our gully maintenance programme. We also carried out a flood investigation and are publishing the findings in three reports, in line with Section 19 of the Flood and Water Management Act. These Section 19 reports are for Wood Green, South Tottenham and Hornsey Crouch End. We will also be reviewing and updating our Local Flood Risk Management Strategy this year.

2.4 As set out in Appendix 1, this report identifies capital investment of £1,035,000 into a range of flood prevention and drainage schemes.

2.5 It is also important to note that the additional funding of £355,000 (capital) and £326,000 (revenue) will allow us to maintain the highway gullies to an improved standard on an ongoing basis, reducing the risk of future localised flooding.

2.6 Finally, we will continue with our programme of highways gully cleansing which saw an additional injection of £431,762 in October 2021. This programme is due to complete by summer 2022.

2.7 The Council will continue to engage with residents, community groups, businesses and other interested parties when co-designing flood schemes, where proposals will alter the existing infrastructure. This engagement will also extend to the management of any likely disruption from any associated proposed construction works.

3 Recommendations

The Cabinet Member is asked:

3.1 To approve the Flood Water Management Investment Plan for the 2022/23 financial year as set out in the attached Appendix 1.

3.2 To delegate decisions relating to flood water management scheme design and implementation to the Head of Highways and Parking.

3.3 To authorise the Head of Highways and Parking to carry out any required consultation in accordance with Appendix 2 and to make any necessary traffic orders, having had due regard to any prior consultation, to give effect to those schemes.

3.4 To authorise the Head of Highways and Parking to consider any objections and representations and to report back to the Cabinet Member for Customer Service,

Welfare and the Public Realm if there are significant or substantial objections or concerns raised; and

3.5 To agree to a review of policy to allow a more robust approach in dissuading the conversion of existing property frontages from soft landscaping to hard landscaping in the face of the global climate crisis.

3.6 To agree to vire £355k from the Borough Roads budget to the Flood Water Management budget

4 Reasons for Decision

4.1 The FWMIP sets out the Council's flood water management and highways drainage resilience projects for the coming financial year and how they align with the Council's strategic objectives.

4.2 The report provides detail of the funding arrangements, seeks authority to proceed with the development and delivery of these projects. Some of those projects will be subject to appropriate consultation.

5 Alternative options considered.

5.1 No other options were considered. The Council has a statutory obligation to maintain the public highway network. The Council is the lead local flood authority in the borough and is responsible for taking the lead in managing flood risk from surface water, groundwater, reservoir, rivers and some of the smaller watercourses. This 2022/23 investment plan has been informed by the Council's Transport Strategy, Local Flood Risk Management Strategy and a developing Asset Management Strategy. The projects proposed are those that have already been identified as priorities to further reduce the risk of future flooding in the borough.

5.2 The funding for the proposed projects comes from Council resources approved by Cabinet as part of the Capital Programme and from external grants or contributions that have been received or are proposed.

6 Background Information

6.1 Flooding is likely to become a more frequent event due to climate change, and the scale of flood events may also increase in the future. The cause of the increase in flood events would be wetter weather throughout the year contributing to surface water flooding overloading the existing drainage systems, as well as river flooding through increased catchment runoff, leading to the risk of many more properties and people being deemed at risk of flooding.

6.2 The Flood and Water Management Act 2010 assigned responsibilities as a lead local flood authority (LLFA) on local authorities including Haringey. This requires the borough to work with strategic partners such as the Environment Agency, water companies and others to manage various aspects of flood risk. In line with

its responsibilities as a LLFA, a Local Flood Risk Management Strategy was produced and subsequently adopted by Haringey in July 2019. It is due to be reviewed in 2022 for any changes following the recent rainfall events in July 2021. The proposed scheme list for 2022/23 incorporates these changes, where applicable.

6.3 In July 2021, Haringey experienced two main flood events throughout the borough which directly resulted in gully cleansing and investigations in areas where these floods occurred. As the Council is an LLFA, Section 19 (Flood Water Management Act) flood investigations were progressed for 3 areas in the borough and the resultant investigatory reports - Appendices 3, 4 and 5 to this report - are now ready to be published.

6.4 These Section 19 reports make numerous recommendations. Section 19 flood investigations are not in-depth analyses of the flood risks or mechanisms. The flood investigations do not give the Council the powers to require any of the parties to undertake the works recommended in the report. However, as the Section 19 reports include recommendations for the Council to act upon, some funding for works is assigned in the 2022/23 programme. In summary, the recommendations include the below:

- Priority to cleaning gully pots in known surface water flood risk areas.
- Haringey Council to consider closures of roads where there are localised high-risk flood warnings.
- Haringey to consider retrofitting SuDS projects where applicable and viable.
- Thames Water to review their surface water cleaning regimes in high-risk areas.
- Thames Water to review their response to floods and this review to be completed by Spring 2022.
- Thames Water to consider a review of high-risk areas to identify locations where surface water sewers can be upgraded to better withstand larger storm events.
- Properties in high-risk flood areas should be made aware of their risk and be encouraged to investigate resilience and resistant measures.

6.5 In response to the flooding events in July 2021 and prior to the Section 19 report findings, Haringey Council reviewed its investment in gully cleansing and maintenance. An additional capital and revenue allocation was made available in 2021/22 totalling £431,762 (comprising £175k capital and £257k revenue). Resulting from this additional investment, the Council commenced, in October 2021, a major programme of cyclical highways gully cleansing that is programmed to be complete by the summer of 2022 - this supplements the annual gully cleansing regime (primarily focused on the borough's 'Critical Drainage Areas') that was already in operation.

6.6 The Local Flood Risk Management Strategy not only aims to clarify the roles of the key partners and improve collaborative working through the sharing of information, but also to identify flood management solutions that can be developed to provide multiple benefits to the natural and social environment. The FWMIP 2022/23 identifies projects and programmes of work to achieve this

objective, as well as supporting the ongoing process of identifying and developing future opportunities.

6.7 There are several external funding opportunities to support the delivery of the Council's flood water management projects. This includes funding through the Environment Agency for flood water management schemes and the GLA's Greener City Fund for local SuDS projects. Grant funding of £200k has been awarded to support the FWMIP for 2022/23.

6.8 The Council agreed an investment of £2,395,000 into flood water management between 2021/22 and 2023/24. Of this funding, £1,035,000 is agreed for 2022/23, allowing a total budget (including external grant funding of £1,235,00) within the FWMIP. The breakdown of this funding is set out in paragraph 8.2 of this report. It is also expected that there will be additional investments associated with regeneration and other development and transport projects.

6.9 The increased commitment to gully cleansing and maintenance will continue into 2022/23. A capital budget allocation of £355,000 will be used to replace highways gullies and/or their drainage connections. This budget will be complemented by an increase in revenue funding for highway gully cleaning of £326,000. This increased level of investment will allow the gully assets to be maintained to a higher standard across the whole of the borough, helping to reduce the future risks of localised flooding.

6.10 The details and locations of the schemes within the 2022/23 programme are set out in Appendix 1. These projects fall generally into 4 categories:

- Strategic or local suburban drainage schemes to help manage flood water (SuDS).
- Projects or annual contributions to support the operation of Haringey Council as the lead local flood authority, including work to support new funding opportunities.
- Measures resulting from recommendations in the Section 19 reports.
- Maintenance of recently installed SuDS Schemes.

Review of policies - p**aving over front gardens**

6.11 The loss of front gardens and other inappropriate water discharges onto the public highway is problematic in highly urbanised areas such as London, as it may lead to increased flood risk and exacerbate local climatic conditions

6.12 The final recommendation referred to in the Section 19 reports findings summary in paragraph 6.4 above is 'Properties in high-risk flood areas should be made aware of their risk and be encouraged to investigate resilience and resistant measures'. Haringey Council, in turn, offers advice through its website and information on how to sign up for flood warnings.

6.13 It is recognised that the conversion of front gardens (which allow rainfall to soak straight into the soft ground) to hard standing is, for the most part, to allow the

parking of vehicles off-road - provided there is sufficient distance (4.8 metres) from the back of highway to the front of the property to accommodate a vehicle, end-on. It should be noted that any proposals for crossovers on the Transport for London Road Network will require approval by TfL.

6.14 A 'Development Management Policy' (DM34) was created in 2017 to help safeguard against any unintended increase in flooding risk. DM34 states the following:

a) Where planning permission is required, the Council will only permit parking on front gardens where a minimum of 50% of existing soft landscaping area is being retained. All proposals must appropriately manage flood risk in line with other plan policies. Any hard standing should incorporate the use of a permeable material
b) All proposals will be considered having regard to their impact on the historic environment, in line with Policy DM9.
c) Cumulative loss of front garden space can result in increased flood risk caused by surface water run off because of the greater expanse of impermeable surfaces. The loss of vegetation can also contribute to increased air pollution in urban areas. The loss of front gardens can also impact the character and appearance of neighbourhood resulting in harm to established streetscapes and the uniform appearances of groups of houses. Where the Council can manage the loss of gardens, not including development which is permitted, it will seek the retention of 50% of the garden as soft landscaping and any hardstanding should be constructed from a permeable material.

6.15 In circumstances where planning permission is not required, the Council provides the following advice on the webpage related to vehicle crossovers under the heading 'sustainable driveways':

"Increased rainfall can leave street drains struggling to cope. When this happens, the water can go back into the front drive and flood homes.
For this reason:

- remove as little of your soft garden as possible
- use permeable paving
- keep hard surfaces to a minimum"

Links are then provided to the Royal Horticultural Society website for further advice on designing front gardens and the introduction of permeable paving.

6.16 The current policy and advice therefore needs strengthening to make property owners far more aware of the adverse environmental impact of any decision to convert their existing frontages to hardstanding. It is extremely unlikely that those who have previously undertaken such conversion will have recognised the cumulative effect that this has – in particular, increasing the likelihood of localised flooding. The need for a more robust approach is in line with an element of the Council's Climate Change Action Plan Objective Com1 – to increase education and awareness raising across the borough to residents and businesses.

6.17 The Council will therefore amend its policy to ensure a more robust approach, as well as strengthening its practices, communications and the education of residents on the consequences of driveway parking.

Design, Consultation and Engagement

6.18 The Council is committed to ensuring that local communities are informed of and engaged in the development of flood water management improvements in their neighbourhoods. A co-production approach broadens the scope of external funding that may be secured for local betterment and helps ensure that local communities have a role in ensuring delivered schemes have more robust sustainability.

6.19 The proposals identified within this report will initially be developed or directed by officers but then broadened out to ensure co-production with residents, Friends Groups and appropriate agencies and organisations. All proposals will be developed in accordance with national, regional, local standards and best practise.

6.20 The level of consultation/notification for schemes is set out in the attached Appendix 2.

6.21 The Council will continue to improve the quality of information available to residents and other interested parties on flood water management projects planned for their areas. This will involve information being made readily available on the Council's website, as well as through improved works signing and advance warning to minimise disruption and inconvenience associated with works.

7.0 Contribution to strategic outcomes

7.1 The Flood Water Management Investment Plan supports two Themes, outlined in paragraphs 7.2 and 7.3, within the Borough Plan 2019-2023.

7.2 People Theme: A Haringey where strong families, sturdy networks and resilient communities nurture all residents to live well and achieve their potential. The projects in the Flood Water Management Investment Plan will contribute to specific outcomes within this Theme, by improving road safety through reduced flooding incidents.

7.3 Place Theme: A place with robust, resilient & connected communities where people can lead active and healthy lives in an environment that is safe, clean and green. The projects in the Flood Water Management Investment Plan will contribute to specific outcomes within this Theme, by improving the public realm, the road network condition and properties which are affected by flooding.

7.4 Economy Theme: growing economy which provides opportunities for all our residents and supports our businesses to thrive. Businesses were negatively impacted by flooding in July 2021. The projects in the Flood Water Management Investment Plan, including the maintenance of the highways drainage system

will also support the business community by alleviating flooding that can negatively impact on them.

7.5 London-wide contribution to a healthier London - The Mayor of London's Transport Strategy.

7.6 Haringey's Climate Change Action Plan – which sets out how and why the borough will become net zero carbon by 2041.

Statutory Officers' comments (Director of Finance (procurement), Head of Legal and Governance, Equalities)

8.0 Finance

8.1 This report sets out the expenditure plan for the Highways and Parking Service in the forthcoming year detailing all the Flood Water Management Investment Plan that includes the various funding streams that have been confirmed by the Environment Agency and Thames Water and the Council's investment.

8.2 The list below provides a breakdown of the budgets for the flood water management investment for 2022/23 as agreed at the Council's budget setting meeting of £1.035m, plus an additional grant from the Environment Agency of £0.06m, a contribution from Thames 21 via Coca Cola funding of £0.07m and a contribution from Thames Water of £0.07m. The grant and contribution will be added to the capital programme.

Council FWMIP capital investment	£0.680m
Assets - capital growth bid gully maintenance	£0.355m
Environment Agency grants	£0.060m
Thames Water	£0.070m
Thames 21	£0.070m
Total	**£1.235m**

Additionally, £0.326m of revenue has been allocated from 2022/23 onwards

9.0 Legal

9.1 The Council as a local highway authority has a statutory obligation under the Highways Act 1980 to maintain the public highways in the borough that it is responsible for, including the management of flood water, highway drainage systems and, road gullies in vehicular highways. This report sets out the Flood Water Management Investment Plan and any necessary consultation for the financial year 2022/23.

9.2 The Council is also responsible for taking the lead in managing flood risk from surface water, groundwater, reservoir, rivers, and some of the smaller watercourses. In 2010, the Flood and Water Management Act came into effect, and this required the Council to take on the role of lead local flood authority

(LLFA) for the Haringey area. The proposals in this report will support the delivery of the Council's Flood Water Management Investment Plan.

9.3 The Head of Legal & Governance confirms there are no legal reasons preventing the Cabinet from approving the recommendations in the report.

10.0 Procurement

10.1 There are no procurement issues arising from this report.

11. Equality

11.1 The Council has a Public Sector Equality Duty under the Equality Act (2010) to have due regard to the need to:

- Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act
- Advance equality of opportunity between people who share those protected characteristics and people who do not
- Foster good relations between people who share those characteristics and people who do not.

11.2 The three parts of the duty applies to the following protected characteristics: age, disability, gender reassignment, pregnancy/maternity, race, religion/faith, sex, and sexual orientation. Marriage and civil partnership status applies to the first part of the duty.

11.3 An Equalities Impact Assessment (EqIA) formed part of the statutory consultation process in 2018/19 which informed the development of the Local Implementation Plan 3 (LIP). The LIP sets out the objectives, delivery plans and monitoring arrangements for all transport scheme proposals, including those that contain flood water management works.

11.4 The key beneficial impacts relate to:

- Improved access to facilities due to managed flooding measures will benefit all Haringey residents and visitors, but some protected groups such as older people and children will benefit disproportionately.

- Safer roads and reduced levels of water pollution are likely to benefit people in some of the protected groups, such as older and/or disabled people with respiratory illnesses more than for the general population.

11.5 Groups who may have greater reliance on travel by car (e.g. people with disabilities; parents with childcare commitments; people in transport poverty) may be affected adversely in comparison to other groups who are better able to use public transport or travel actively. Schemes will be individually planned and delivered in such a way as to minimise any negative impacts that may arise due to construction works.

11.6 Flood water management schemes can increase cycling and walking through improved drainage to the highway network.

11.7 The communication and engagement measures set out in the Flood Water Management Investment Plan 2022/23 will increase awareness of works and minimise disruption caused at implementation stages. This will allow residents adequate time to make alternative travel arrangements, and any necessary adjustments will be made on a scheme-by-scheme basis to ensure continued access for affected groups with protected characteristics including disabled and elderly residents.

12 Use of Appendices

Appendix 1: Flood Water Management Investment Plan proposals for 2022/23
Appendix 2: Consultation for Flood Water Management Works Plan in 2022/23
Appendix 3: Section 19 Flood Investigation Report - Wood Green
Appendix 4: Section 19 Flood Investigation Report - South Tottenham
Appendix 5: Section 19 Flood Investigation Report - Hornsey and Crouch End

13 Local Government (Access to Information) Act 1985

- Borough Plan 2019-2023
- Transport Strategy 2018
- Draft Walking and Cycling Action Plan
- Cabinet report 7/12/21: 2022-23 Budget and 2022-2027 Medium Term Financial Strategy Report
- Local Plan
- Local Flood Risk Management Strategy, Cabinet report 9/7/19
- Flood Water Management Investment Plan 2021/22, Cabinet report 9/3/21

Appendix 1

Project Name	Ward	Project Brief / Overview	Grant	Source	Council Budget 2022/23
Queen's Wood Natural Flood Management Project	Muswell Hill	Completion of scheme to mitigate surface water flood risk to the properties at Wood Vale and the surrounding areas as well as protecting the ecology and biodiversity of an ancient woodland. Works proposed to be on site in Spring 2022.	£70,000	Thames Water 2022-23, plus any EA carry over funding from 21/22	0
Chestnuts Park Rainscape Masterplan	St Ann's	To investigate the possibility of opening the Stonebridge Brook culvert and reduce flooding of downstream properties. Further surveys include topographical, ecological and connectivity. Detailed design to commence in 2022/23.	£30,000 £70,000	EA Local Levy £30k remaining from 2021/22. Thames 21 via Coca Cola for wetlands.	£95,000
Larkspur Close (IUD) - Phase II	White Hart Lane	Detailed design completion and commencement of the construction of SuDS works at Fryatt Road and Jellicoe Road to reduce the flooding incidents in Larkspur Close.	£0		£180,000

Project Name	Ward	Project Brief / Overview	Grant	Source	Council Budget 2022/23
Muswell Hill Flood Mitigation Scheme	Fortis Green	Co- design of final details for SuDS improvements (rain gardens, permeable paving) within the area of the junction of Muswell Hill, Priory Road, Park Road, Etheldene Avenue and Farrer Mews to address the existing surface water drainage issues.	0		£199,000
Priory Park Flood Alleviation Scheme Phase 1		Completion of design and commencement of drainage works outside and within the Park.	£30,000	EA Local Levy (EA) remaining £30k from 2021/22. EA Bid to be made for later work phases	£110,000
Adams Road Minor SuDS Scheme	West Green	Maintenance of recently constructed SuDS scheme.	£0		£1,000
Works as recommended in Section 19 Investigation Reports	Borough-wide	Retrofit SuDS, Additional Gullies cleaning and installations, Work with TfL to prevent flooding at Underground Stations.	£0		£80,000
London Lee Catchment Partnership - Thames 21	Borough-wide	Annual contribution to Thames 21. Use its contact network including corporates, government, academic, charitable trusts, and any other contacts to develop and apply on behalf for funds along with engagement of local communities.	£0		£5,000

Project Name	Ward	Project Brief / Overview	Grant	Source	Council Budget 2022/23
Section 19 Investigation Reports	Borough -wide	Any further S19 of Flood & Water Management Act to investigate flooding.	£0		£5,000
External Funding Bids	Borough -wide	Drafting proposals for a government fund for innovative projects	£0		£5,000
Gully maintenance programme	Borough -wide	Borough wide highways gully works, for repairs, new connections and gullies, programme	£0		£355,000
Grants	Site Specific	EA, Thames 21, Thames Water	£200,000		**1,035,000**
Total Capital	**£1,235,000**				
Revenue Gully Cleansing programme	Borough -wide	Borough wide highways gully cleansing programme	£0		£326,000
			£0		**326,000**
Total Revenue	**£326,000**				

Appendix 2

Consultation for Flood Water Management Investment Plan

The various flood water management schemes developed through the FWMIP will be the subject of consultation/ notification. The level of consultation will depend upon the size and impact of the scheme on the local community and whether it is a statutory requirement. The three consultation/notification types are:

- Notification of works (schemes that have a minor impact on the highway network and public realm) – residents and businesses of affected properties will be notified by letter drop before commencement of detailed design works. In addition, they will be notified by letter drop and any other appropriate media up to 3 weeks in advance of work commencing.

- Statutory notification e.g. traffic regulation orders **-** the public will be notified of the Council's intention regarding proposals through advertisements placed in the local press and on site. Residents and businesses locally affected by the proposals will also be notified by letter drop. The notification will provide details of the scheme and a commencement date for the proposed construction works. Resident, traders and stakeholders will have the opportunity to approve/object to these proposals and these will be considered before implementation of the schemes.

- Public consultation – any larger high-profile schemes will be subject to a consultation with the locally affected properties and lead user groups (where applicable e.g. for parks). The consultation will include public and Microsoft Teams meetings, exhibition of proposals on the web and on local notice boards, the liaison with local groups. Below sets out the consultation process for each scheme.

Consultation on Flood Water Management Investment Plan 2022/23

Scheme name / type	Consultation Type		
	Notification	Statutory Notification	Full Consultation
Queen's Wood NFM Scheme	✓		
Chestnuts Park Rainscape Masterplan	✓		✓
Larkspur Close (IUD) - Phase II	✓		✓ (where applicable)
Muswell Hill Flood Mitigation Scheme	✓	✓	✓ (where applicable)
Priory Park Phase 1 Flood Mitigation Scheme	✓	✓	✓
Section 19 Works	✓	✓	✓ (where applicable)

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Section 19 Flood Investigation Report

Wood Green

London Borough of Haringey

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REVISION HISTORY

Rev. Ref.	Date	Prep	Chk	App	Amendments	Reason for Issue
1	15/11/2021	AH	AMC	AMC	Original	Draft
2	02/12/2021	AH	AMC	AMC	Update with additional information received	Draft
3	09/12/2021	AH	AMC	AMC	SuDS scheme info added	Draft
4	07/01/2022	AH	AMC	AMC	Update with additional information received	Final
5	11/01/2022	PD	AMC	AMC	Minor Amendments	Final
6	21/01/2022	PD	AMC	AMC	Minor Amendments	Final

DISTRIBUTION

Recipient	Revision					
	1	2	3	4	5	6
FILE	✓	✓	✓	✓	✓	✓
Pankit Shah	✓	✓	✓	✓	✓	✓

DISCLAIMER

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responsibility or liability for any use that is made of this document other than for the purposes for which it was originally commissioned and prepared, including by any third party.

Abbreviations used within the report

CDA	Critical Drainage Area
DWMP	Drainage and Wastewater Management Plan
FEH	Flood Estimation Handbook
FWMA	Flood and Water Management Act 2010
LLFA	Lead Local Flood Authority
mAOD	Metres Above Ordnance Datum
RMA	Risk Management Authority
SFRA	Strategic Flood Risk Assessment
SWMP	Surface Water Management Plan
TW	Thames Water

CONTENTS

1 INTRODUCTION

1.1 Terms of Reference

McCloy Consulting have been instructed on behalf of Haringey Council to undertake an investigation into flooding, in accordance with Section 19 of the Flood and Water Management Act, 2010.

1.2 Legislative background

Where a significant flood event has occurred and the responsibility for managing the future risk is unclear, Haringey Council may conduct a formal flood investigation, under Section 19 of the Flood and Water Management Act, 2010. The aim of this investigation is to identify which authority has responsibilities and whether they are proposing to respond. The results of the investigation will be published.

As the Lead Local Flood Authority (LLFA) for the study area, Haringey Council has a duty to investigate flood incidents as set out in Section 19 of the Flood and Water Management Act, 2010 (the Act). The Act states:

(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.

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:

a. Heavy rainfall

b. A river overflowing or its banks being breached

c. A dam overflowing or being breached

d. Tidal waters

e. Groundwater, or

f. Anything else (including any combination of factors).

But "flood" does not include

g. flood from any part of a sewerage system, unless caused by an increase in the volume of rainwater, entering or affecting the system, or

h. a flood caused by a burst water main

1.3 Defining the study extents

Two flood events were experienced in July 2021.

- 31 reports of flooding to Haringey Council recorded following rainfall events on 12th July 2021.
- 47 reports of flooding to Haringey Council recorded following rainfall events on 25th July 2021.

Widespread flooding was experienced across Haringey for both events. Haringey Council has proposed that reported flood incidents be split into three geographic areas of Wood Green, Hornsey Crouch End and South Tottenham. These areas describe the main concentrations of flood reports across the catchment taking into account both dates. This report covers the **Wood Green** geographic area.

2 STUDY AREA

2.1 Study Location and Context

Wood Green is a suburban district in the borough of Haringey in London, England. Its postal district is N22, with parts in N8 or N15.

Figure 2-1 below shows the extent of the study area being considered within this report.

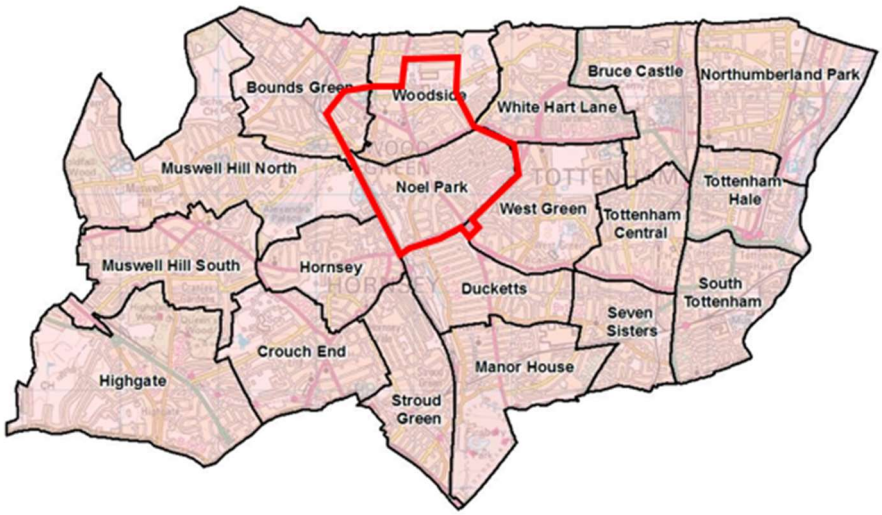


Figure 2-1 Study area extents

Wood Green is described by the London Plan as one of the metropolitan centres of Greater London, and it forms a major commercial district of North London. The A105 High Road, the main shopping spine which encompasses The Mall area, stretches from the Wood Green tube station to the next stop on the Piccadilly line, Turnpike Lane, and is lined with shops along its route. It joins with Green Lanes at both its northern and southern ends. The Great Northern Route railway line bounds the eastern extent; industrial and commercial are distributed along this boundary. The remaining areas of Wood Green are dominated by residential housing.

2.2 Topography

The topography of Wood Green, as with the wider London Borough of Haringey, generally slopes down in an easterly direction down towards the River Lee. The area slopes from circa 35m above ordnance datum (AOD) in the north west and west, to circa 20mAOD in the east.

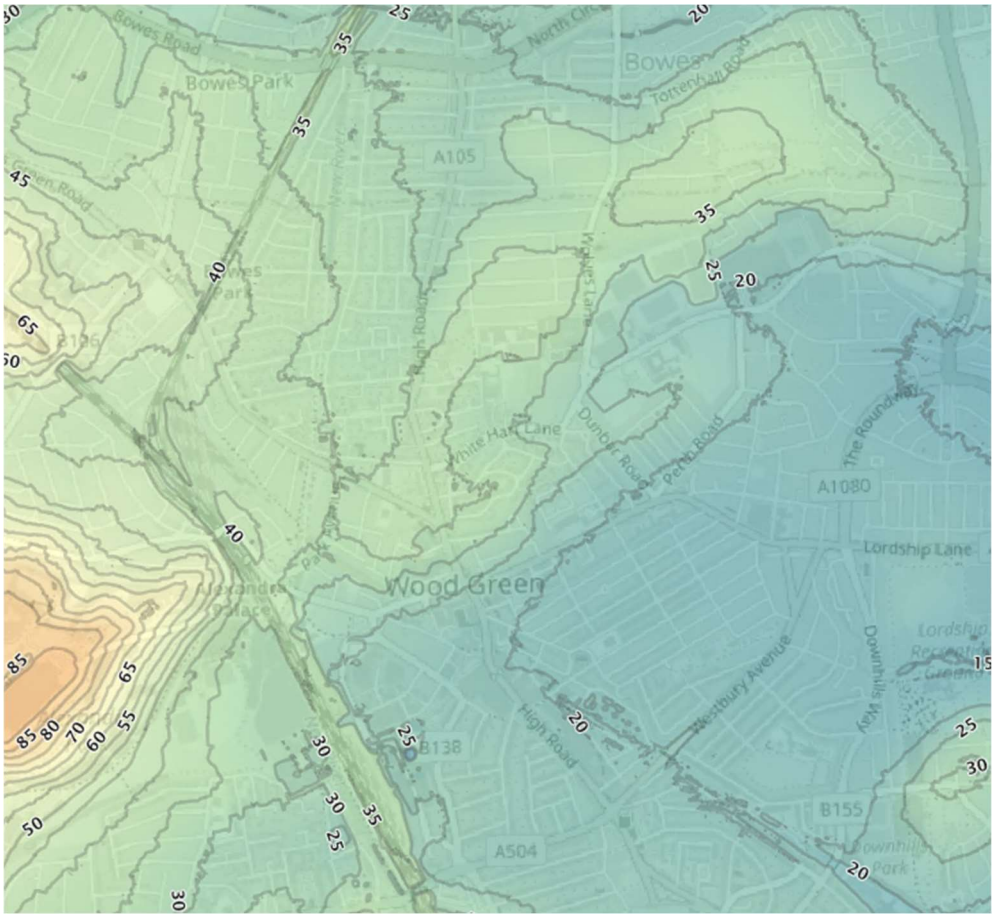


Figure 2-2 Topography of Wood Green within London Borough of Haringey

2.3 Geology and Soils

Historic borehole logs within Wood Green were reviewed using British Geological Survey (BGS) database.

Borehole Grid References TQ39SW238, TQ39SW286 and TQ38NW257 identified similar ground conditions generally described as follows;

Made Ground (silty clay with fragments of brick, concrete, rootlets and ash) was encountered to up to 1.3m below ground level (bgl), with London Clay (stiff brown silty clay) encountered beyond that to over 30m bgl.

2.4 Watercourses

Wood Green lies within the Thames Catchment, in particular drains to the Lower Lee.

Haringey's Strategic Flood Risk Assessment (SFRA)[1] details how a number of watercourses within the borough are culverted and commonly described as 'lost'.

The currently known alignment of watercourses local to Wood Green is shown in Figure 2-3. Note that the New River is a controlled waterway with Thames Water having responsibility under the FWMA.

[1] Strategic Flood Risk Assessment, 2015, Haringey Council: UK. Available at: http://www.haringey.gov.uk/sites/haringeygovuk/files/2012s6315_haringeycouncil_sfra_v4.0_0.pdf Accessed on 24/08/2017.

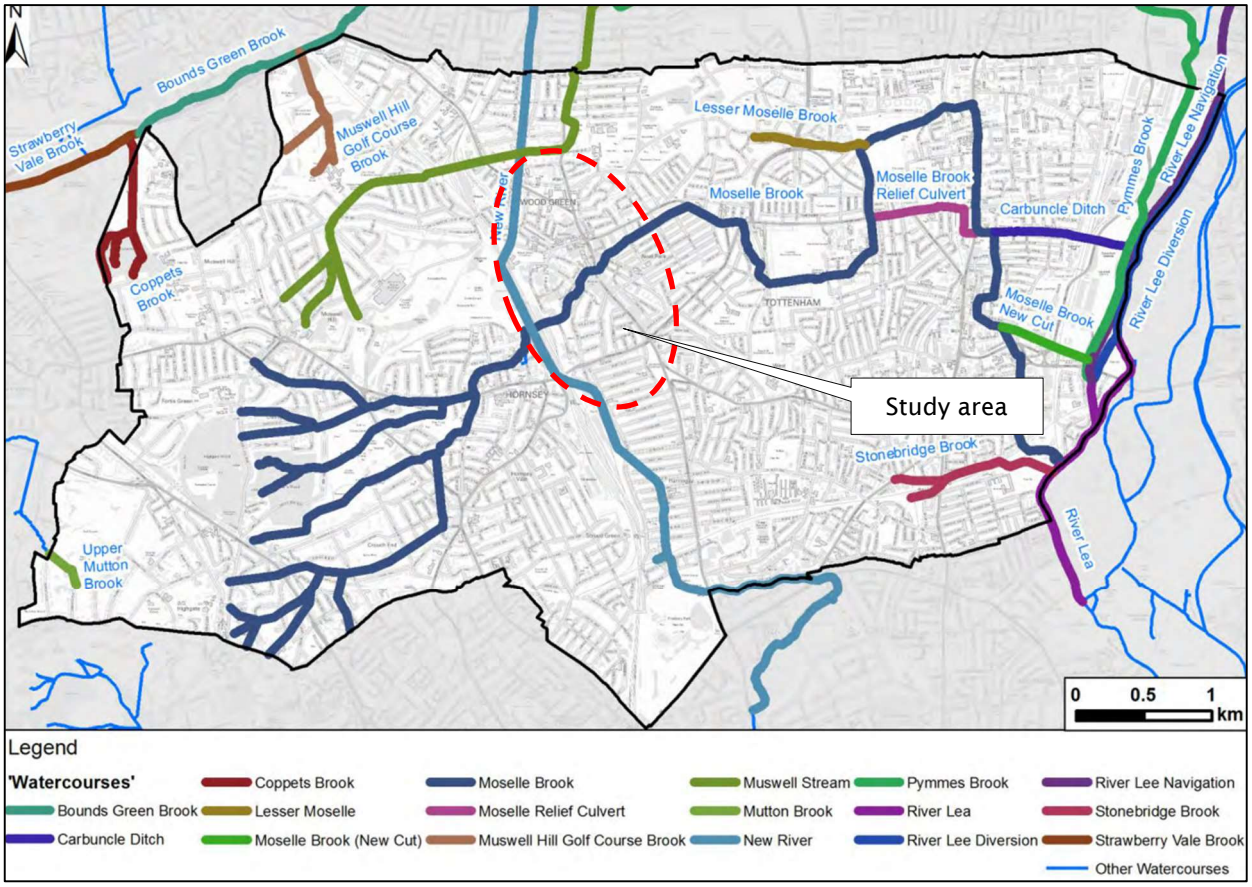


Figure 2-3 Overview of watercourses in Haringey and surrounding areas (from Haringey SFRA)

The following table indicates who is responsible for watercourses in Haringey;

Table 2-1 Watercourse responsibility in the London Borough of Haringey[2]

Watercourse	Classification	Responsibility under the FWMA
Moselle Brook	Main River	Environment Agency
Stonebridge Brook	Main River	
Pymmes Brook	Main River	
River Lee/River Lee Navigation	Main River	
Unnamed ditches / Watercourses not classified as Main River	Ordinary Watercourse	Haringey Council
New River	Artificial Watercourse	Thames Water

[2] Surface Water Management Plan (SWMP), 2011, Haringey Council: UK. Available at: https://www.haringey.gov.uk/sites/haringeygovuk/files/dlt2_gp4_haringey_swmp_draft_v2.0_0.pdf Accessed on 02/11/21

2.5 Sewerage

The majority of the Wood Green area is urban development of residential and commercial properties. The area therefore has a high percentage of impermeable area due to buildings, car parks, hard standings and highways.

The sewer network in the Wood Green area is separate, with a percentage of storm runoff contributing to the foul system. The public sewers in Wood Green are owned and maintained by Thames Water.

For the purposes of the Section 19 investigation, Thames Water has provided access to the Practitioner Portal of the Drainage and Wastewater Plan (DWMP). The DWMP portal provides modelling outputs from Thames Water's Capacity Assessment Framework, which includes identifying areas where sewers would be at capacity during a 2 year storm, where potential escapes from manholes would occur during a 30 year storm and the risk of flooding during a 50 year storm. This information has been used to further analyse the possible flood mechanisms across the study area.

2.6 Highway Drainage

The public highway generally drains to the public sewer network in this area via road gullies and pipework owned and maintained by Haringey Council as the local highway authority.

2.7 Flood Risk Mapping

The Environment Agency (EA) online maps provide readily available flood risk data within the study area. No new flood risk mapping has been produced to support this assessment.

2.7.1 Risk of Flooding from Rivers and Sea

The entire Wood Green district is within Flood Zone 1 whereby the annual risk of flooding, from either rivers or the sea, is less than 0.1%.

2.7.2 Risk of Flooding from Surface Water

The surface water Long-Term Flood Risk Map is shown in Figure 2-4. There are areas of high-risk flooding on main vehicular routes throughout the borough, notably: along the A1080 Turnpike Lane close to Turnpike Lane underground station; the A105 High Road in the vicinity of The Mall and Coleraine Road junction; the A109 Bounds Green Road adjacent Trinity Gardens. Further areas of flood risk are shown throughout residential streets of Noel Park in the east of the borough, as well as throughout the commercial areas east of the railway line.

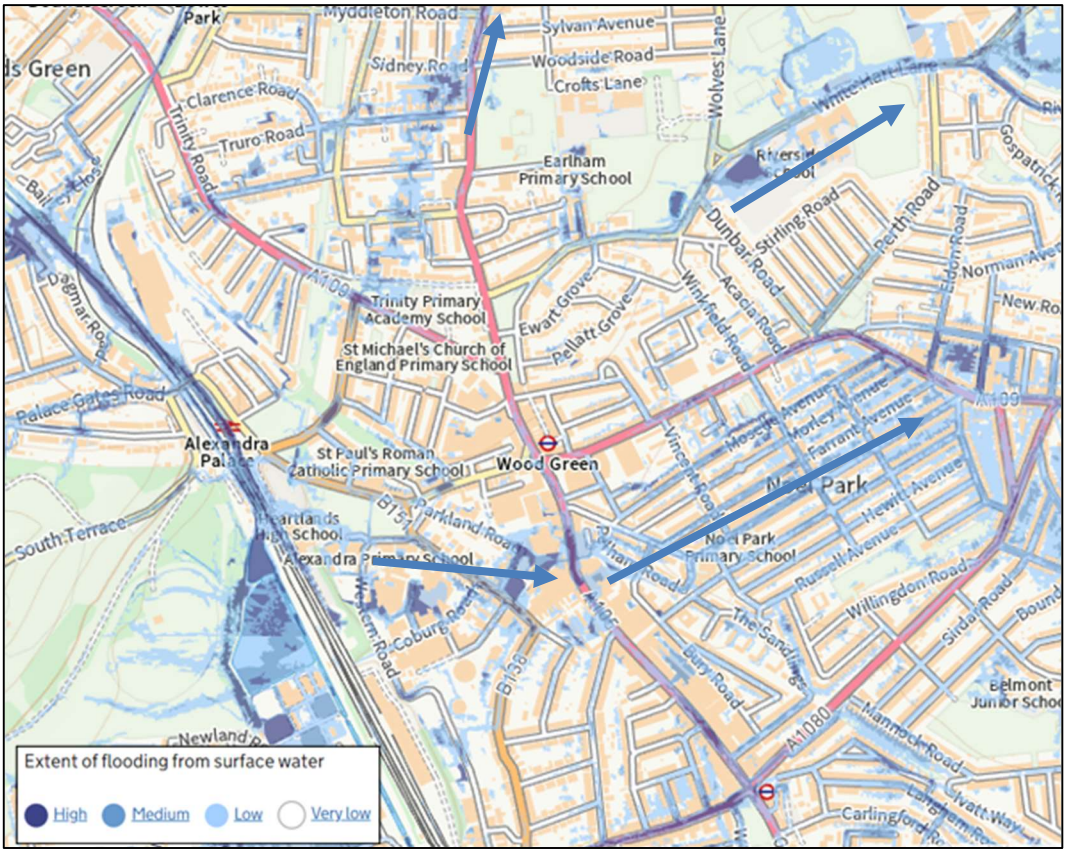


Figure 2-4 Surface Water Long Term Flood Risk Map

3 RISK MANAGEMENT AUTHORITIES

3.1 Haringey Council

Haringey Council is the LLFA for the area and the highway authority. The Flood and Water Management Act 2010 gives LLFAs powers and duties for the strategic overview of local flooding and for some flood risk management functions including:

- A duty to investigate flooding;
- A duty to maintain a register of significant structures and features;
- Powers to regulate ordinary watercourses;
- A duty as a statutory consultee to review drainage strategies and surface water management provisions associated with applications for major development.

As the highway authority, Haringey Council is responsible for the maintenance and operation of drainage gullies and the pipework connecting these to the public sewers for the proper function of highways and safety of highway users.

Haringey Council has contracted Marlborough Highways to support it on all aspects of highway infrastructure including carriageway, footway and cycleway maintenance, junction improvements, traffic calming measures, gully, drainage works and sustainable drainage systems (SuDS). The five year contract began in 2020.

3.2 Environment Agency

The EA is responsible for taking a strategic overview of the management of all sources of flooding and coastal erosion. The EA also has responsibility for managing the risk of flooding from main rivers, reservoirs and estuaries.

3.3 Statutory Undertaker for Public Sewers

Thames Water has a duty as a sewerage undertaker under Section 94 of the Water Industry Act 1991, to provide and maintain sewers for the drainage of buildings and associated paved areas within property boundaries. It has responsibility for any flooding which is directly caused by its assets i.e. its water or sewerage pipes. It also has a duty to cooperate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities.

3.4 Transport for London

Transport for London (TfL) is responsible for the primary roads, underground, rail networks (London Overground and TfL Rail), buses, taxis, trams and river services in London. In Haringey, the primary roads, or 'Red Routes' which TfL is responsible for include the A406, the A10 and parts of Archway Road and Seven Sisters Road.

3.5 Riparian Landowners

Private landowners have responsibilities for the maintenance and upkeep of ordinary watercourses, including any associated culverts, and the bed / banks of any watercourse adjacent to or within their land. They should clear away any debris from the watercourse or culvert even if it did not originate from their land.

3.6 Residents and Property Owners

Private landowners are responsible for the maintenance and operation of drainage assets and connecting pipework located on privately owned roads and footways, car parks and other hard standings and for building surface water drainage.

Residents and property owners who know they are at risk of flooding have the responsibility to mitigate the risk of flood damage to their property as far as is reasonably practicable[3]. They should take measures to protect themselves and their property when flooding is imminent. Residents and property owners have the right to defend their property as long as they do not increase the risk of flooding to other properties.

Business owners should make a flood plan for their business. There are measures that can be taken to reduce the amount of damage to business premises caused by flooding and properties at risk should be insured.

[3] Living on the Edge. Environment Agency, 2015, available at https://www.wlma.org.uk/uploads/EA_Guide_to_rights_and_responsibilities_of_riverside_ownership.pdfhttps://www.wlma.org.uk/uploads/EA_Guide_to_rights_and_responsibilities_of_riverside_ownership.pdf, accessed 15th November 2021

4 SUMMARY OF RAINFALL EVENTS

4.1 12th July 2021

At 10:04 on 11th July 2021 (and updated 08:54 on 12th July 2021), the Met Office issued a Yellow warning of Rain expected between 10:00 and 23:59 on 12th July 2021. The warning covered the East of England, London, South East England and South West England.

Rainfall data was obtained from the EA for review from gauges located in Hornsey (grid reference TQ30557 89795), Brent, (grid reference TQ20836 87013) and Wanstead (grid reference TQ 41544 88234).

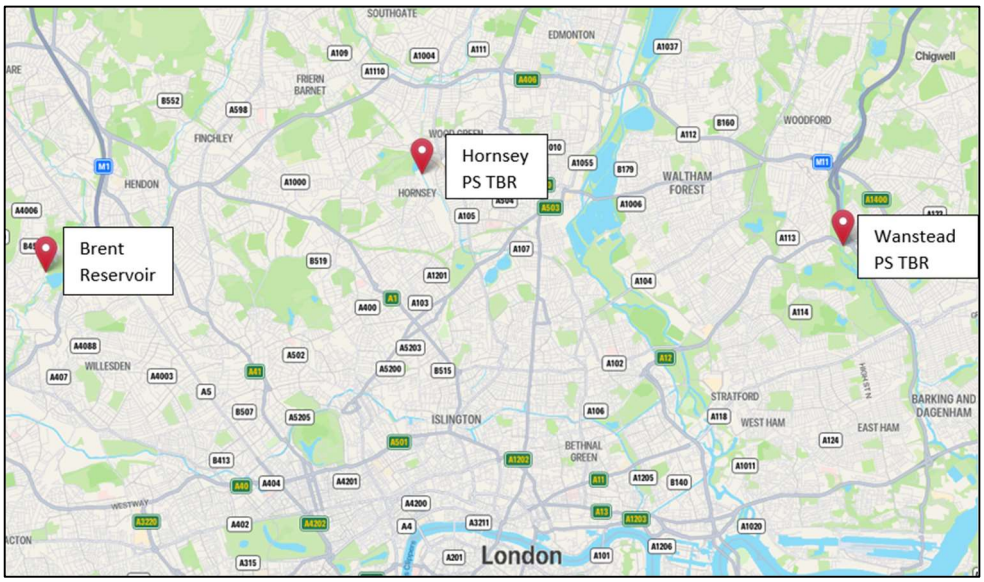


Figure 4-1 Locations of rainfall gauges

The most significant rain was recorded at Brent Reservoir between 17:00pm and 19:00pm, which recorded 7.6 mm of rainfall within this period. This coincides with reports of flooding observed on Turnpike Lane in the evening of 12th July. This rainfall is estimated as 1 in <2 year return event based on comparison of data obtained from the Flood Estimation Handbook. A total of 11.6mm was recorded for the whole day, with 10.2 mm of this falling over 3.5 hours. The rain gauge at Wanstead recorded 8mm over 24 hours, and the gauge and check gauge at Hornsey gave unreliable readings on the day due to apparatus blockages.

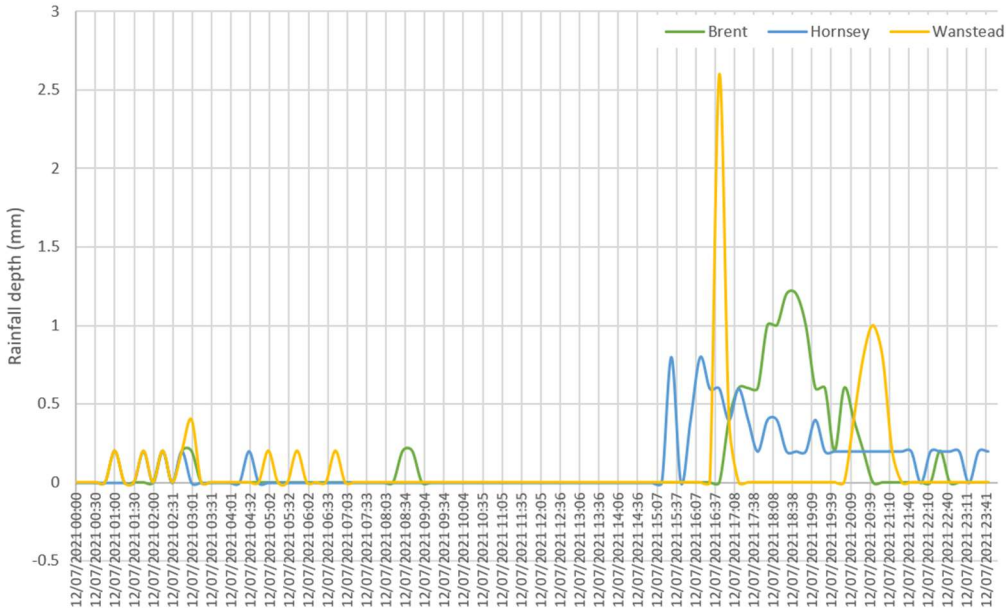


Figure 4-2 Rain gauge data, 12th July 2021

The relatively low rainfall recorded above is not consistent with the flood reports and anecdotal evidence provided from the area. The Hornsey gauges were blocked on retrieval of data and the recordings conflict with the Thames Water analysis of the event, which was presented at a recent workshop related to the floods[4], and indicated that the district received rainfall return periods ranging from a <10 year to a <30 year event. The areas in which the gauges are located in Brent (Borough) and Wanstead (London Borough of Redbridge) did not experience the same intensity of rainfall experienced elsewhere, which concurs with the relatively low estimated rainfall return period derived from the rain gauge data for these locations.

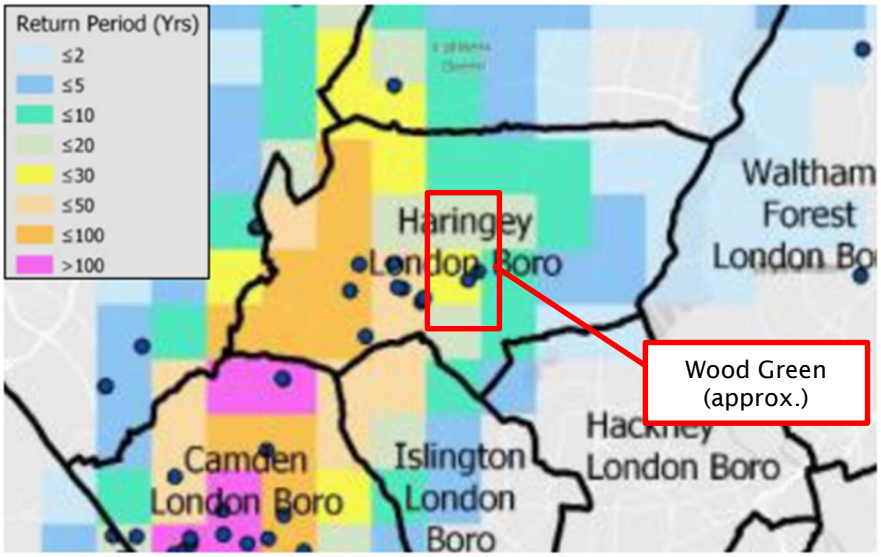


Figure 4-3 Rainfall Return Period and Report Flooding Incidents, 12th July 2021 (RaRa data using FEH99).

4.2 25th July 2021

The Met Office issued an Amber warning of Thunderstorm at 14:33 on 25 July 2021, expected between 14:33 and 19:00 on 25th July 2021, covering East of England, London and South East England.

The most significant rain being recorded at the selected gauges was between 14:15 and 15:45 at Wanstead. The rain gauge recorded 49 mm of rain within this time period, which was estimated to be a 1 in 70 year rainfall return event. A total of 54 mm was recorded for the whole day. The rain gauges at Brent Reservoir and Wanstead recorded 7.6mm and 22.8mm, respectively on this date.

[4] Supporting Section 19 Investigations, Workshop, 28th September 2021. Thames Water: UK

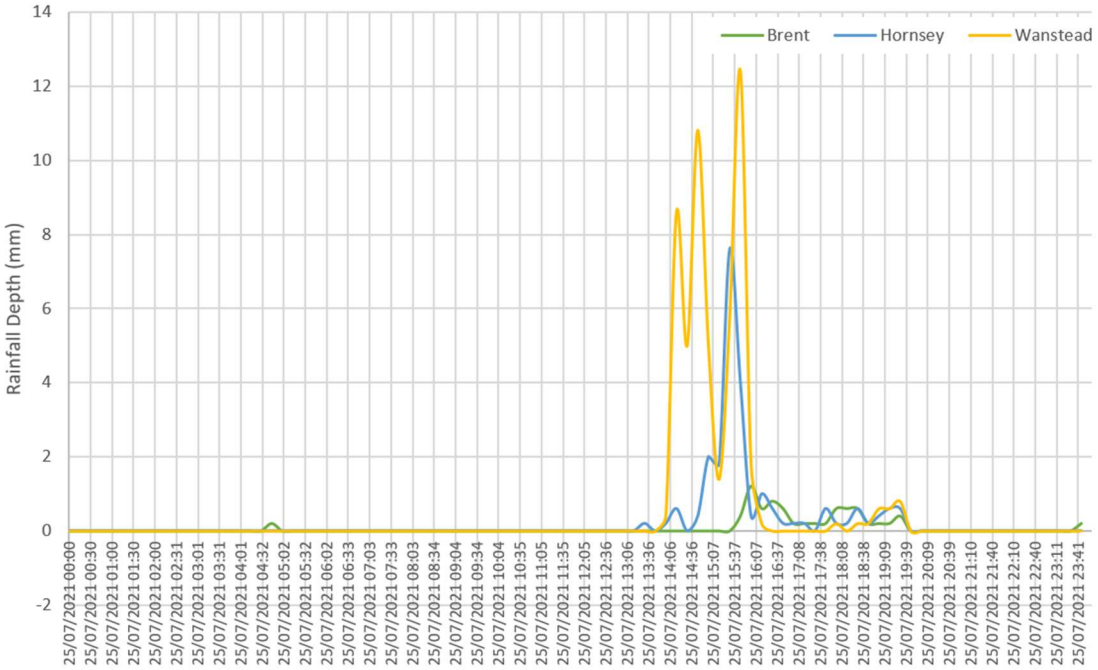


Figure 4-4 Rain gauge data, 25th July 2021

The Thames Water workshop presented and indicated that the district received rainfall return periods ranging from a <5 year to a <30 year event.

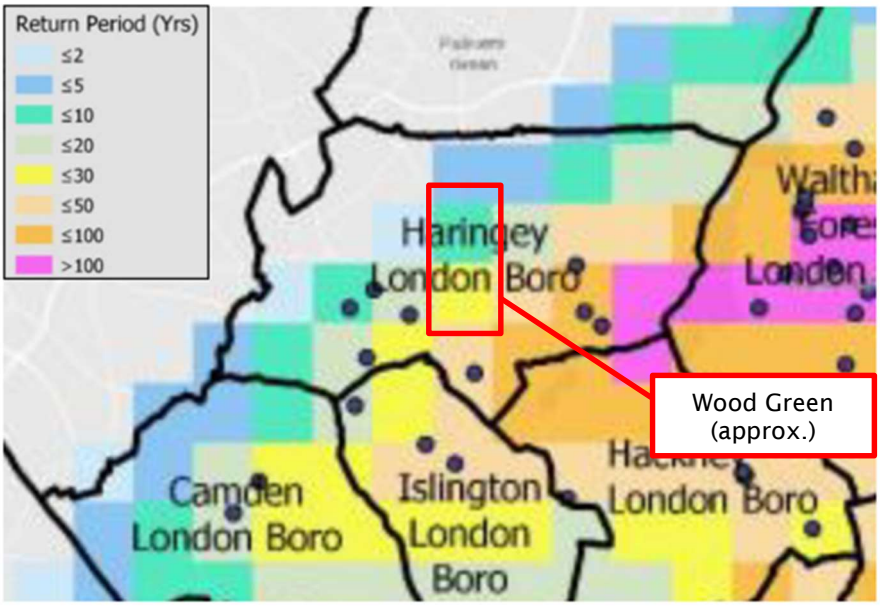


Figure 4-5 Rainfall Return Period and Report Flooding Incidents, 12th July 2021 (RARA data using FEH99).

5 ANALYSIS OF THE FLOOD EVENTS

5.1 Records of Incidents

Table 5-1 summarises the reports of flooding received by Haringey Council, and reactionary works that were undertaken by Haringey Council.

It is noted that the following have been screened out of further investigation;

- flood reports from single properties (not in proximity to other properties)
- locations where it is clear from the report that flooding was caused by internal drainage failure (for example a leaking roof).

Flood reports that have been screened out have been denoted by * beside the location name in the following table.

To support this investigation, Haringey Council has been provided with flood reports collated by London Fire Brigade (LFB) and Thames Water.

LFB received a total of 99 calls on 12th July 2021 and 58 calls on 25th July 2021 across the borough. Thames Water received 17 calls on 12th July 2021 and 13 calls on 25th July 2021 across the borough. LFB and Thames Water responses to individual flood locations are noted in the location specific sections of this report.

Table 5-1 Schedule of report flood incidents in Wood Green

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area (CDA)
Bounds Green Road				
Trinity Road / Partridge Way / Nightingale Road jct	12/07/2021	Flooding in highway, report of blocked gullies	Marlborough Highways (MBHW) attended to unblock gullies	Group 4_010
Civic Centre*	12/07/2021	Leaking roof	Being addressed by others	Not applicable
The Mall Area				
High Road under The Mall bridge, outside gym	12/07/2021	Major flooding in the highway	Marlborough Highways (MBHW) attended to unblock gullies	Not in CDA
Shops in The Mall area of High Road (Metro Bank, New Look, Perfect Carpets)	12/07/2021	Flooding of premises	Being handled by insurance team	Not in CDA

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area (CDA)
Turnpike Lane				
Turnpike Lane / Willoughby Road jct	12/07/2021	Flooding in highway, reports of numerous blocked gullies and water emerging from manhole	Marlborough Highways (MBHW) attended to unblock gullies	Not in CDA
Turnpike Lane Station	25/07/2021	Flooding	None recorded	Not in CDA
37-71 Turnpike Lane	26/07/2021	Flooding of gullies, numerous blocked drains	None recorded	Not in CDA
Other Locations				
Bury Road Car Park	12/07/2021	Flooding in car park	Water had receded at time of crew attendance, no action taken	Not in CDA
Gladstone Avenue	12/07/2021	Flooding in highway	MBHW are adding a new drainage location	Not in CDA
Lordship Lane Primary School*	13/07/2021	Longstanding flooding/drainage issue	No action taken	Group 4_075

Figure 5-1 presents an overlay of flood reports from Haringey Council's Reported Flooding Impacts Mapping and highlights the areas of interest where an increased number of flood incidents were reported. Note that screened out locations also appear in this figure.

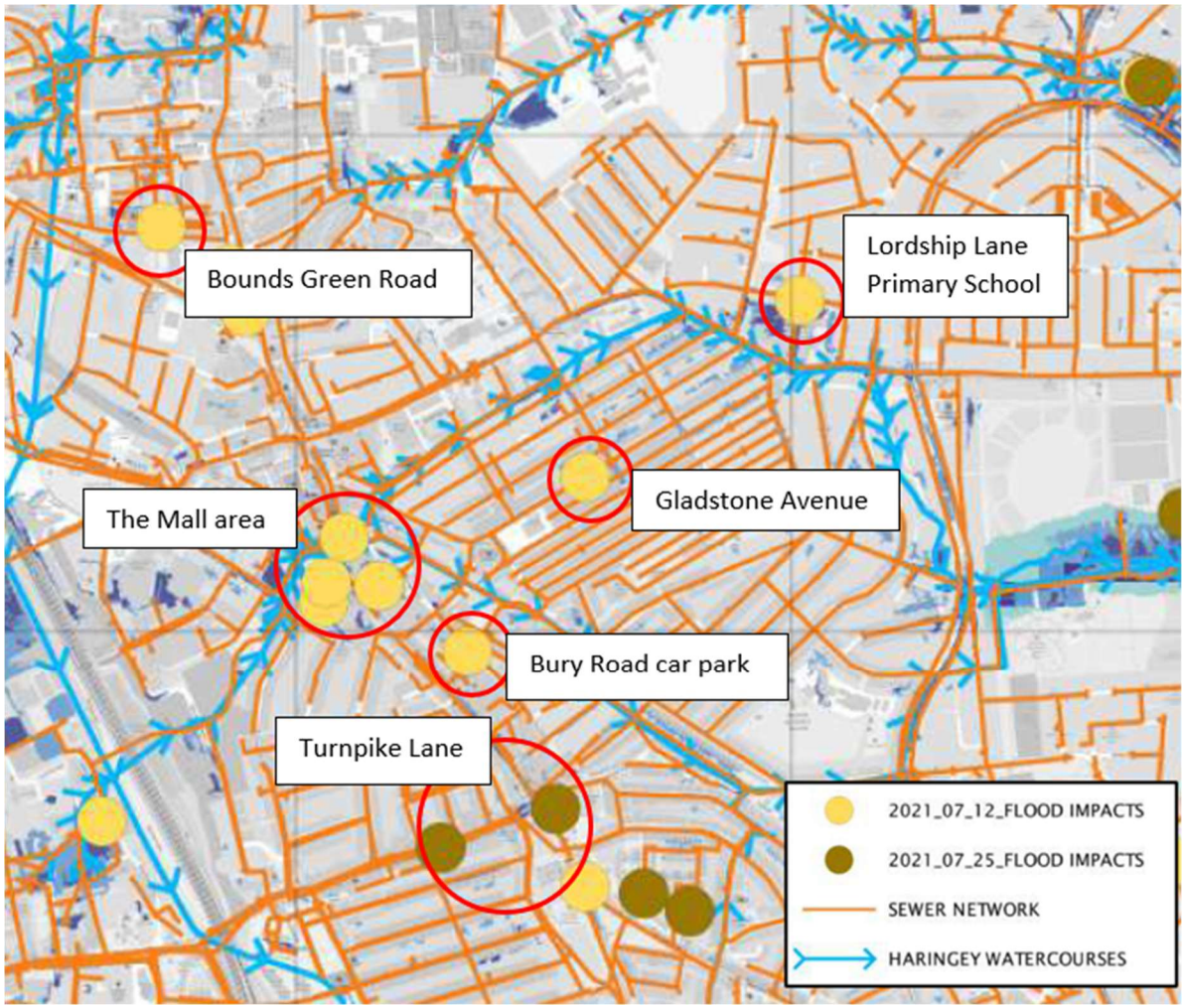


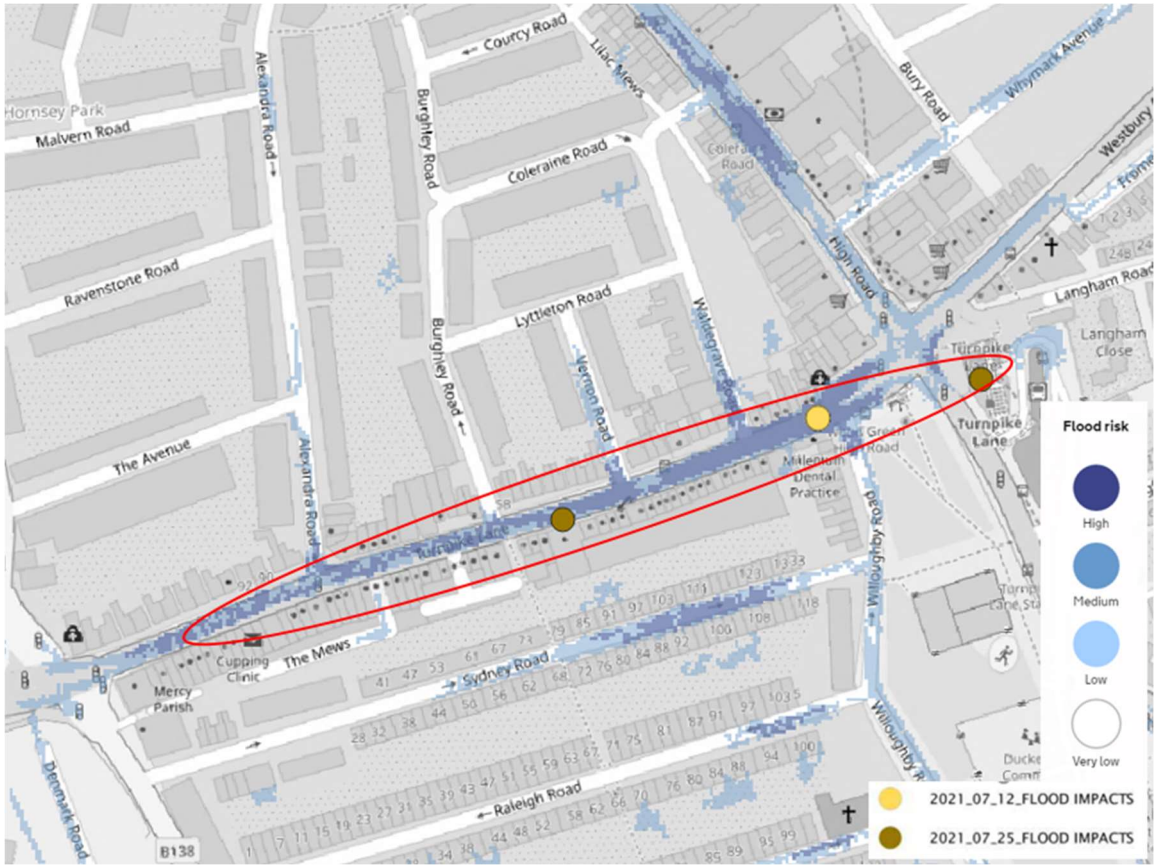
Figure 5-1 Recorded flood impacts and areas of interest in Wood Green, 12th July 2021

5.2 Turnpike Lane

Figure 5-2 Site Location

Location	Turnpike Lane

Location Plan:



5.2.1 Summary of Impact

12th July 2021

Video footage was received of Turnpike Lane near its junction with Willoughby Road at 19:21pm on 12th July 2021. The footage shows the carriageway and part of the adjacent footways inundated with water up to up to approximately 400mm deep. Pedestrians are observed ankle deep in water, with one observed attempting to unblock a drain along the main road. Vehicles continue to pass creating bow waves which wash the flood waters further onto the footways. Commentary in the video indicates that the flood water is being washed into adjacent shops. A second video shows the flood waters covering the entire footway outside numbers 6-18 Turnpike Lane. Flood waters can be observed flowing into business premesis at No. 16 Turnpike Lane. A social media report from the business owner of No. 1 Turnpike Lane described how flooding occurs from the manhole outside the business premises.

A flooding report was made to LFB from a commercial property near the junction of Turnpike Lane with Wightman Road, but no further details are given as to the nature of the flooding.

TfL confirmed via email that Turnpike Lane station was closed for periods on the 12th July due to flooding. No further details have been provided at time of writing.

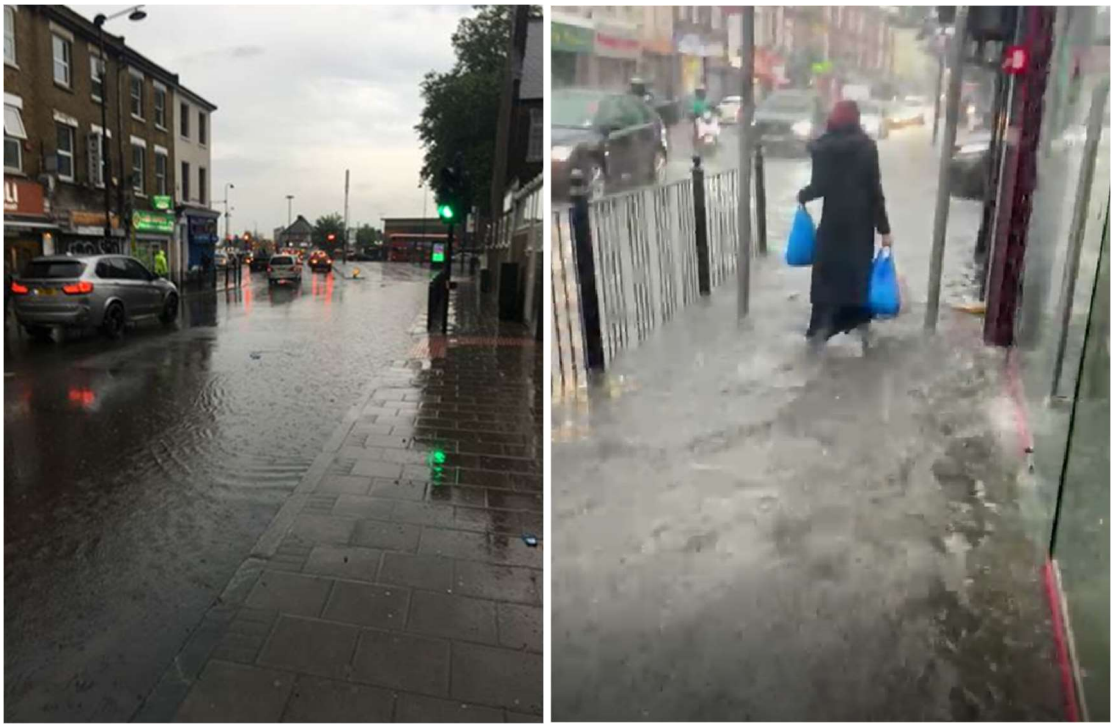


Figure 5-3 Flooding on Turnpike Lane, 12th July 2021

25th July 2021

Reports of flooding were received from Turnpike Lane on 25th July 2021. An emergency call was made to London Fire Brigade at 16:56pm citing flooding at 1 Turnpike Lane, with flooding also reported at the underground station and businesses at 37-71 Turnpike Lane. Reports of flooding were not received north of Turnpike Lane, consistent with Thames Water analysis that the more intense rainfall missed most of the district.

TfL confirmed via email that Turnpike Lane station was closed during the 25th July from 17:55 for the rest of the day due to flooding. TfL confirmed that the flooding was partially the result of surface water flowing into the ticket hall area from the street, and partially from sewage backing up through the toilets and wash basins within the station.

Video footage provided by Haringey Council of its response works outside 57 Turnpike Lane (close to the junction of Burghley Road). Surface water can be seen backing up the gully lead and back into the gully pot. The clerk of works attending the site surmised that the water must be backing up from a surcharged sewer.

During a site walkover visit on 26th October 2021, businesses owners indicated that highway flooding frequently occurs along Turnpike Lane, though they have rarely experienced internal flooding of their premises as a result.

5.2.2 Site Context

The eastern extent of Turnpike Lane, between the junctions with Burghley Road and Willoughby Road, is the lowest section along the Lane at approximately 23.0mAOD. Turnpike Lane falls from circa 34mAOD near the railway bridge in the west to this point. Further east the road rises again to the junction with Westbury Avenue, Green Lanes and High Road. The surface water flood map in Figure 5-2 indicates the risk in this area is due to the number of flow routes converging in this area, with limited ability for the water to flow away over the ground.

5.2.3 Existing Drainage and Watercourses

Asset records indicate parallel stormwater sewers running along Turnpike Lane of 229mm and 305mm diameter respectively. The location is not within a critical drainage area.

The DWMP model indicates that surface water sewers on the western stretch of Turnpike Lane (i.e. from the railway underpass to the junction with Burghley Road) would surcharge during a 1 in 2 year storm, and a risk of water escaping from manholes during a 1 in 30 year event is indicated at the junction with Burghley Road. No output is shown for the eastern stretch between Burghley Road and Turnpike Lane underground station.

There are no watercourses identified in close proximity to this location.

Haringey have noted (by email dated 13th January 2022) that there is a foul sewer connection to the stormwater drain within Turnpike Lane.

5.2.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records two instances of flooding in the Turnpike Lane area. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N8 0 postcode area, as of 2010. Flooding also occurred in 2008 and in April 2021 (noted as being due to burst water mains).

5.2.5 Potential Flood Mechanisms

The video and anecdotal evidence strongly suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low points, which reached sufficient depths to enter property. The DWMP model outputs suggest that the limited receiving capacity of the sewers would have been the primary cause of flooding. This is supported by anecdotal evidence from a local business describing water escaping from a manhole on Turnpike Lane[6]. Further investigation would be required in the east of Turnpike Lane to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer or both. It is also understood by Haringey Council that the sewers in this part of Turnpike Lane are relatively shallow; this would need to be confirmed by Thames Water. Other contributing factors to the extent (depth and magnitude) of flooding include:

- **Sewer incapacity**

  Flooding was observed from manhole at No. 1 Turnpike Lane. Haringey Council have indicated that the 9 inch sewer along Turnpike Lane is very shallow with invert of the sewer just lower than the outlet from the gully pots. Haringey have noted via email (20/01/22) that that have been informed that during heavy rainfall, runoff cannot enter the gully pots as the sewer system is already in surcharge status. Potential for a foul connection has been identified by Haringey. Capacity of the storm sewer will be further compromised where there is a foul connection.

- **Blocked gullies**

  One of the business owners on the eastern extent of Turnpike Lane (No. 1) contacted the Council through social media to highlight that local gullies had been blocked for at least 5 weeks leading up to 12th July, but received no response from the Council or Thames Water. A site walkover on 26th October 2021 showed that at least 3 no. gullies along a 120m stretch of the Lane (including outside No. 1) were blocked. Any blockages would have reduced the capacity for surface water to enter reach the public sewer.

- **Bow wave effect**

  Video footage from the 12th July flooding along Turnpike Lane indicated that larger vehicles moving through the flood water caused a bow wave effect. Anecdotal reports from local business confirmed that this led to further movement of water onto the footway and into properties.

- **Threshold Heights**

  During the site walkover it was noted that a number of properties in the affected area had flush front door thresholds. The flush threshold is a requirement for accessibility. This arrangement would allow for surface water to quickly enter properties once the footway had been submerged.

[6] Twitter, 2021, https://twitter.com/haringeycouncil/status/1415038111164289030

5.2.6 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to unblock gullies along the road. It is not stated in the flood report schedule how many gullies were cleaned, but a site walkover on 26th October 2021 showed that at least 3 no. gullies along a 120m stretch of the Lane were blocked.
- Provided a schedule of all gully cleaning works that have taken place in Wood Green between 12th July and 30th September 2021. A total of 79 jobs were raised for gully clearance between these dates. Confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- The issue of the underground station flooding was raised at the London Assembly on 15th October 2021[7], in which the Mayor confirmed that TfL was aware of the issue. A flood detecting system with remote alarm panel and an anti-flood valve to prevent backflow were both installed. While the anti-flood system is now fully tested and operational, the existing anti-flood system was found to be no longer fit for purpose following the last flood incident on Sunday 25 July 2021, and a modern replacement system has been ordered and will be installed by the end of November.
- TfL outlined via email the procedures staff are required to undertake during extreme weather. This includes physically monitoring water levels at street and station level every 30 minutes. Once levels begin to rise, additional drain clearance is instructed. Floodsax are placed to direct water down the exit corridors away from access gates, escalators and staff areas.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- Attended 1 Turnpike Lane on 25th July 2021 having received a call at 16:56pm. No details are given of the remedial works carried out.

5.2.7 Next Steps

The EA surface water flood maps indicate that Turnpike Lane is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

- Thames Water to investigate presence of foul drainage connection to storm sewer and remove (if connection is identified) to reduce hydraulic load on storm sewer network. Given the observed surcharge status of the sewer and the manhole flooding outside No.1 Turnpike Lane, increase of sewer capacity at this location should be investigated by Thames Water.
- Haringey Council have noted that they will be undertaking increased frequency of gully pot cleaning along Turnpike Lane.
- Haringey Council to consider implementation of SuDS measures in the upslope catchment to reduce the amount of runoff reaching the location of flood risk.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- TfL to work with other RMAs / LLFA to investigate strategies for preventing flooding of the underground station in future events.

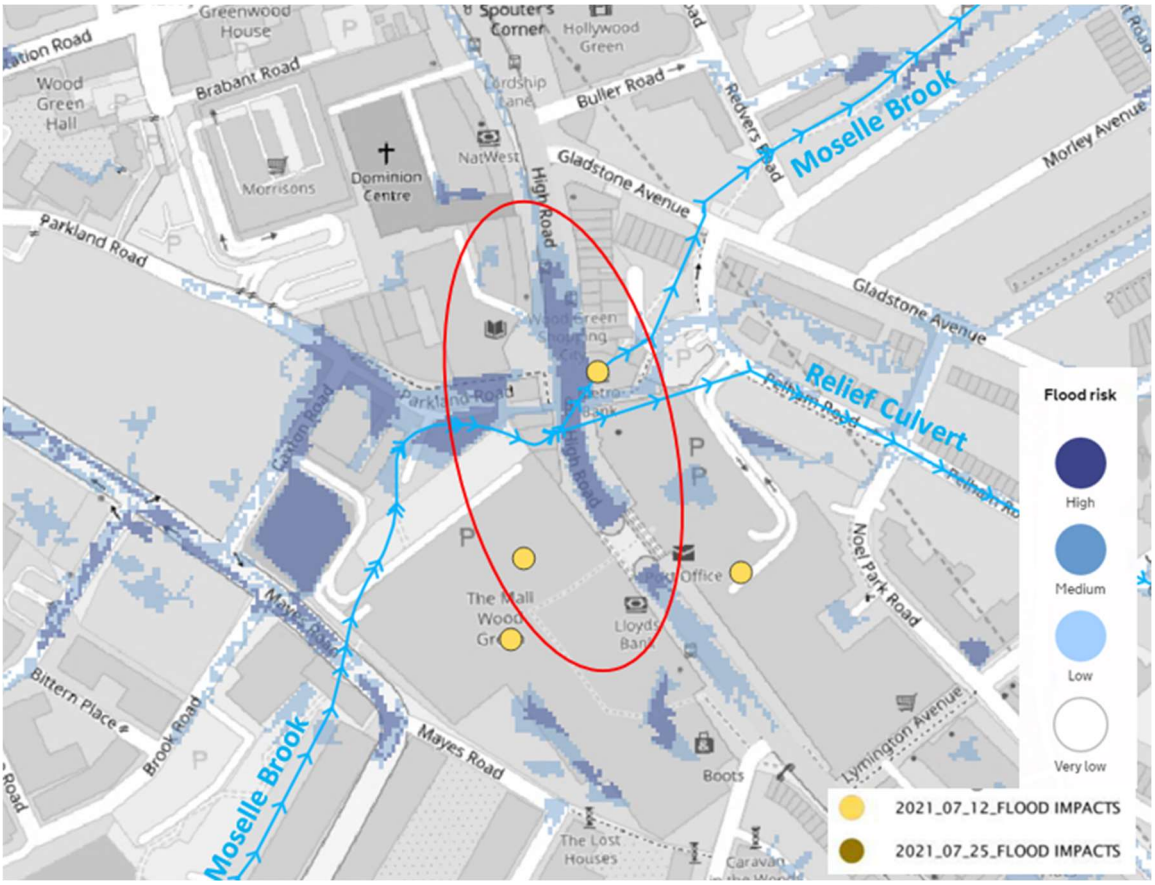
[7] Turnpike Lane Flooding – 2021/3504, available at Turnpike Lane Flooding | Mayor's Question Time (london.gov.uk), London:UK

5.3 The Mall

Figure 5-4 Site Location

Location	The Mall

Location Plan:



5.3.1 Summary of Impact

12th July 2021

Reports of flooding were received from businesses in The Mall area of High Street, where major flooding of the highway was reported, and several businesses had contacted their insurance companies to deal with flood related damage. Photographs and videos circulated on social media indicated the spread and depth of flooding under the bridge within The Mall area. At 17:53pm on 12th July The Mall itself announced via social media that it had closed the centre due to the weather[8].

[8] Twitter, 2021 https://twitter.com/MallWoodGreen/status/1414628905877712912

Figure 5-5 Flooding at The Mall, 12th July 2021

25th July 2021

The only recorded flood report from 25th July in The Mall area was a business at 83 Mayes Road, on the west of The Mall centre. No further information was available from the flood report schedule and the property could not be contacted.

5.3.2 Site Context

High Road, which passes through The Mall under a pedestrian bridge (see Figure 5-3) falls in a southerly direction from a high area (circa 40mAOD) near the junction with Bounds Green Road in the north. The High Road generally falls all the way to its junction with Westbury Avenue and Turnpike Lane (20mAOD), but there is a localised low spot in the vicinity of The Mall at the pedestrian bridge underpass. The highest surface water risk, as shown on the surface water flood map in Figure 5-4, is consistent with this section. The carriageway under the pedestrian bridge is lower than the surrounding footways by up to 500mm and a total of 5 gullies are present over the 30m section of road under the bridge. Raised pedestrian crossings are located to the south and north of the pedestrian bridge, further confining surface water runoff within the underpass section. To the north and south of the underpass section, kerbs are either flush or have a 6-25mm high upstand from the carriageway.

5.3.3 Existing Drainage and Watercourses

Asset records indicate that two surface water sewers within High Road in The Mall area. A 229mm diameter pipe runs from the north along High Road; the other is located south of the pedestrian bridge but there is no further information on the asset records of this.

Surface water sewers in Mayes Road and Parkland Road adjacent to The Mall, are indicated by the DWMP modelling outputs to be at risk of surcharging during a 1 in 2 year storm. The DWMP model also predicts that during a 1 in 30 year event there is a risk of manhole flooding at the junction of Mayes Road and Coburg Road.

A culverted section of the Moselle Brook passes through The Mall area, crossing High Road and continuing through Parkland Road. A relief culvert for the Moselle Brook branches from the main alignment within Parkland Road and continues along Pelham Road east of The Mall area. Planning permission for a significant extension on the western side of The Mall was granted in 2007, despite concerns being raised that the extension would be vulnerable to flooding from the Moselle. Asset records indicate that local surface water sewers connect into the culvert; the extent and nature of these would need further investigation.

5.3.4 Flood History

The Haringey SWMP does not record any instances of flooding at The Mall specially. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N22 6 postcode area, as of 2010.

5.3.5 Potential Flood Mechanisms

The photographic evidence, local topography and available flood reports suggest that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low points on High Road within the vicinity of The Mall, causing flooding of the highway. Any surcharging or flooding of the Moselle Culvert may have increased flooding on the carriageways and footways. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, the Moselle Brook Culvert, or a combination.

On Mayes Road, the flood report location corresponds to the DWMP modelled 1 in 30 year risk of manhole flooding.

Further items were identified that may have affected the depth and magnitude of the flooding, including:

- **Kerb Heights**

  It was noted that kerb sections to the north and south of The Mall were flush or 6-25mm high upstands adjacent the carriageway. Any excess surface water may quickly pass onto footways and then to properties.

5.3.6 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to unblock gullies along the road. It is not stated in the flood report schedules how many gullies were cleaned, but a site walkover on 26th October 2021 showed that at least 2 no. gullies within The Mall underpass were blocked, and at least 1 no. gully was blocked near the High Road junction with Alexandra Road.
- The flood report schedule indicates that the businesses within The Mall area had contacted their insurance companies to deal with the flood damage.
- Provided a schedule of all gully cleaning works that have taken place in Wood Green between 12th July and 30th September 2021. A total of 79 jobs were raised for gully clearance between these dates. Confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No calls were recorded by LFB for this location.

5.3.7 Next Steps

The EA surface water flood maps indicate that The Mall is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

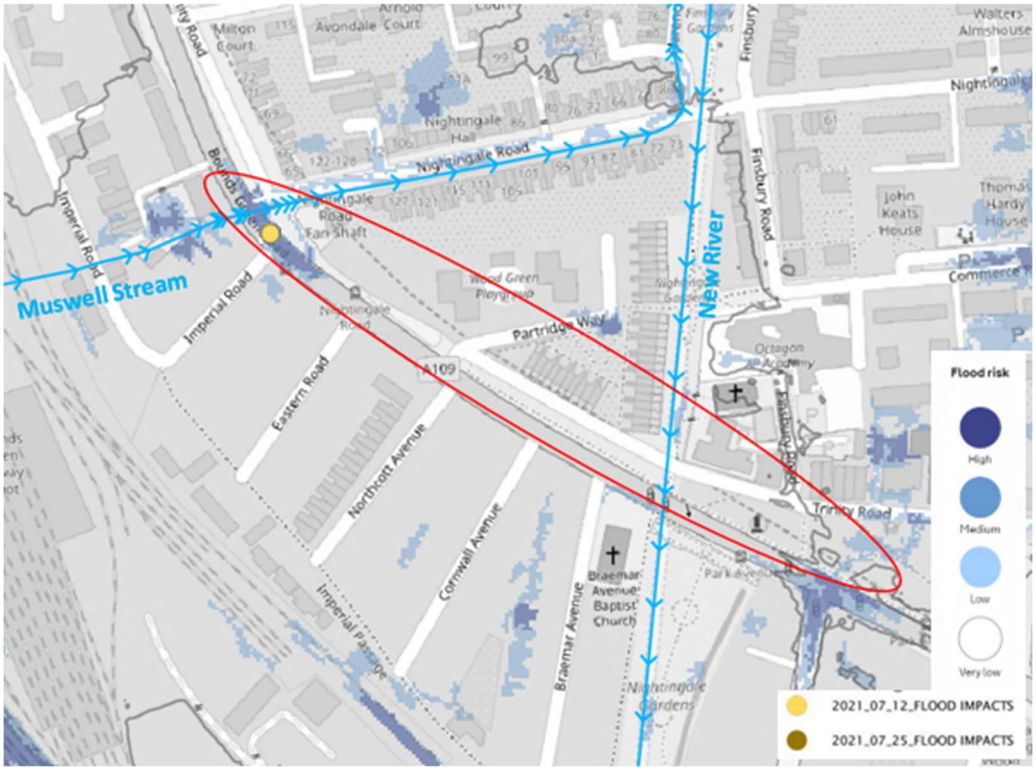
- Haringey Council to programme and undertake gulley cleaning along High Road and through The Mall underpass.
- Haringey Council to consider implementation of SuDS measures in the contributing catchment to reduce the volume and rate of runoff reaching the area at risk and reduce the load on the drainage infrastructure at this location. In particular, a number of flat pitched buildings may potentially be able to accommodate green roofs, subject to residual space and loading capacity.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Inspection of the Moselle Brook Culvert and the downstream relief culvert to ensure it is working at maximum operating capacity.

5.4 Bounds Green Road

Figure 5-6 Site Location

Location	Bounds Green Road

Location Plan:



5.4.1 Summary of Impact

12th July 2021

Flooding of the highway on Bounds Green Road was reported on 12th July, to which Haringey Council responded. The initial report was recorded as flooding having occurred outside 18 Trinity Road and at the junction of Bounds Green Road and Partridge Way. The photographic evidence of the call out indicates flooding at the junction of Bounds Green Road and Nightingale Road, near Bounds Green Ambulance Station.

Figure 5-7 Flooding at Bounds Green Road (jnct Nightingale Road), 12th July 2021

25th July 2021

There was no flooding reported on 25th July in this area.

5.4.2 Site Context

Bounds Green Road generally falls from the Bowes Park railway overpass (circa 45mAOD) to its junction with High Road (32mAOD). There is a topographical low spot at its junction with Park Avenue. The EA maps (Figure 5-6) show two areas of high surface water risk along this section of Bounds Green Road; the junction with Park Avenue and junction with Nightingale Road. Bounds Green Road is a local distributor road with an average width of 12.5m in the area of interest.

5.4.3 Existing Drainage and Watercourses

Asset records indicate that 229mm diameter surface water sewers within this section of Bounds Green Road, which increases to 305mm diameter east of the junction with Braemar Avenue.

The DWMP model shows that surface water sewers throughout Bounds Green Road is at risk of surcharging during a 1 in 2 year storm.

A culverted section of the Muswell Stream crosses Bounds Green Road and continues along Nightingale Road. Asset records indicate that local surface water sewers may connect into the culvert; the extent and nature of these would need further investigation.

5.4.4 Flood History

The Haringey SWMP does not report any instances of flooding specifically along Bounds Green Road. Appendix D, Figure 9 of the SWMP records up to 6-10 instances of flooding in the N22 8 postcode area, as of 2010.

5.4.5 Previous flood studies

Bounds Green Road falls within CDA Group 4_010 (“Green Lanes (A105) and neighbouring roads, Wood Green). The CDA analysis shows surface water flows down Green Lanes, cutting through properties towards Pymmes Brook. Water is observed to pond in low points. At the junction of Bounds Green Lane and Nightingale Lane this ponding is estimated in the CDA analysis to reach 0.25 to 0.5m depth, whilst flood depths of 0.10 to 0.25m depth are estimate at the junction of Bounds Green Lane and Park Lane.

5.4.6 Potential Flood Mechanisms

The photographic evidence showing localised flooding and follow up reporting from Haringey Council suggests that the primary cause of the flooding at the Bounds Green Road / Nightingale Road junction was caused by a blocked gully limiting the rate at which surface water could enter the local drainage system.

Reported flooding is located at the crossing of the Muswell Stream Culvert. Surcharging of this culvert may have caused or exacerbated flooding locally on the carriageway and footway. Further investigation would be required to confirm.

5.4.7 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to unblock the gullies at the junctions and for further inspection of this area to be undertaken.
- Provided a schedule of all gully cleaning works that have taken place in Wood Green between 12th July and 30th September 2021. A total of 79 jobs were raised for gully clearance between these dates. Confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No calls were recorded by LFB for this location.

5.4.8 Next Steps

The EA surface water flood maps indicate that The Mall is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

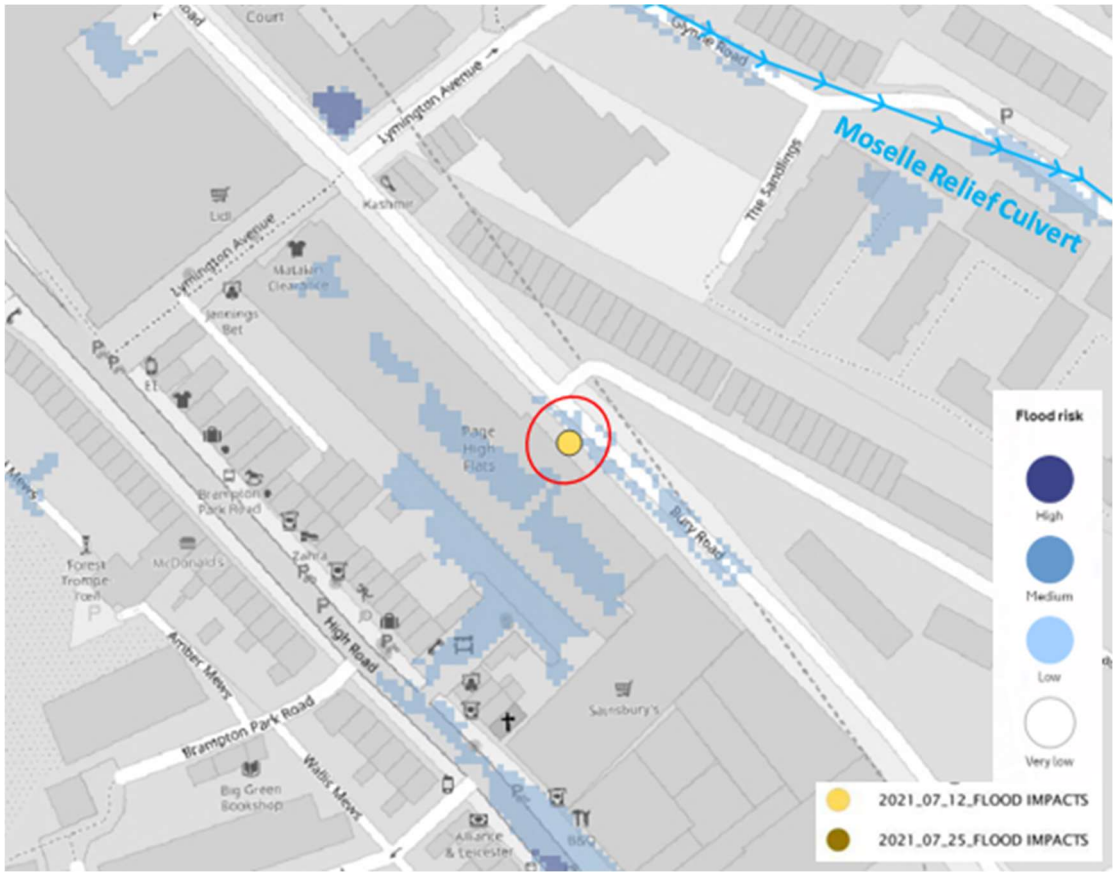
- Haringey Council to programme and undertake increased frequency gully cleaning along this high risk section of Bounds Green Road.
- Haringey Council to consider implementation of SuDS measures in the contributing catchment to reduce the volume and rate of runoff reaching the area at risk and reduce the load on the drainage infrastructure at this location. Nightingale Gardens and Trinity Gardens are identified as having existing green spaces which may be able to accommodate nature based SuDS features.
- Haringey to consider inspection of the Muswell Hill Culvert (defined as ordinary watercourse at this location) to ensure it is working at maximum operating capacity.

5.5 Bury Road Car park

Figure 5-8 Site Location

Location	Bury Road Car park

Location Plan:



5.5.1 Summary of Impact

12th July 2021

Flooding at Bury Road car park was reported on 12th July, to which Haringey Council responded. The initial report was recorded as flooding of the car park. By the time Haringey Council attended site on the evening of 12th July, most of the floodwater had dissipated, with some residual surface water noted at the car park entrance. Inspection of the gullies was instructed. The flood report schedule indicates no further action was taken.

The car park maintenance team was contacted for further information but no further information from the day was available.

Figure 5-9 Remaining flood water at Bury Road car park, 12th July 2021

25th July 2021

There was no flooding reported on 25th July in this area.

5.5.2 Site Context

Bury Road is located circa 200m southeast of The Mall area and runs parallel to High Road. The entrance to the car park lies in the topographically lowest part of Bury Road (c20mAOD), which also correlates to the only area of medium surface water flood risk on the road. The main public entrance to the car park ramps up quickly from Bury Road. The loading entrance, seen on the left in Figure 5-9 above, ramps down to a lower level within the building.

5.5.3 Existing Drainage and Watercourses

Asset records indicate that a 305mm diameter surface water runs through this section of Bury Road, which increases to 534mm diameter south the car park entrances.

The DWMP model shows that surface water sewers along Bury Road would be at risk of surcharging during a 1 in 2 year storm by 2035.

The section of carriageway adjacent to the frontage of Bury Road car park is drained by 1 no. gully, and historic photographs show that standing water along the front of the car park, where cracking and deterioration of the carriageway edge is also visible. No information has been obtained related to internal building drainage.

5.5.4 Flood History

Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N22 6 postcode area, as of 2010.

5.5.5 Potential Flood Mechanisms

The photographic evidence and follow up reporting from Haringey Council suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated along the frontage of Bury Road car park, eventually passing into the car park. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, or both.

5.5.6 Responses to Flooding

Haringey Council:

- Attended Bury Road on 12th July 2021 to inspect the gullies. No confirmation of blockages on record, and upon arrival at site Haringey Council noted that the majority of the water had dispersed.
- Provided a schedule of all gully cleaning works that have taken place in Wood Green between 12th July and 30th September 2021. A total of 79 jobs were raised for gully clearance between these dates. Confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No calls were recorded by LFB for this location.

5.5.7 Next Steps

The EA surface water flood maps indicate that Bury Road car park is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

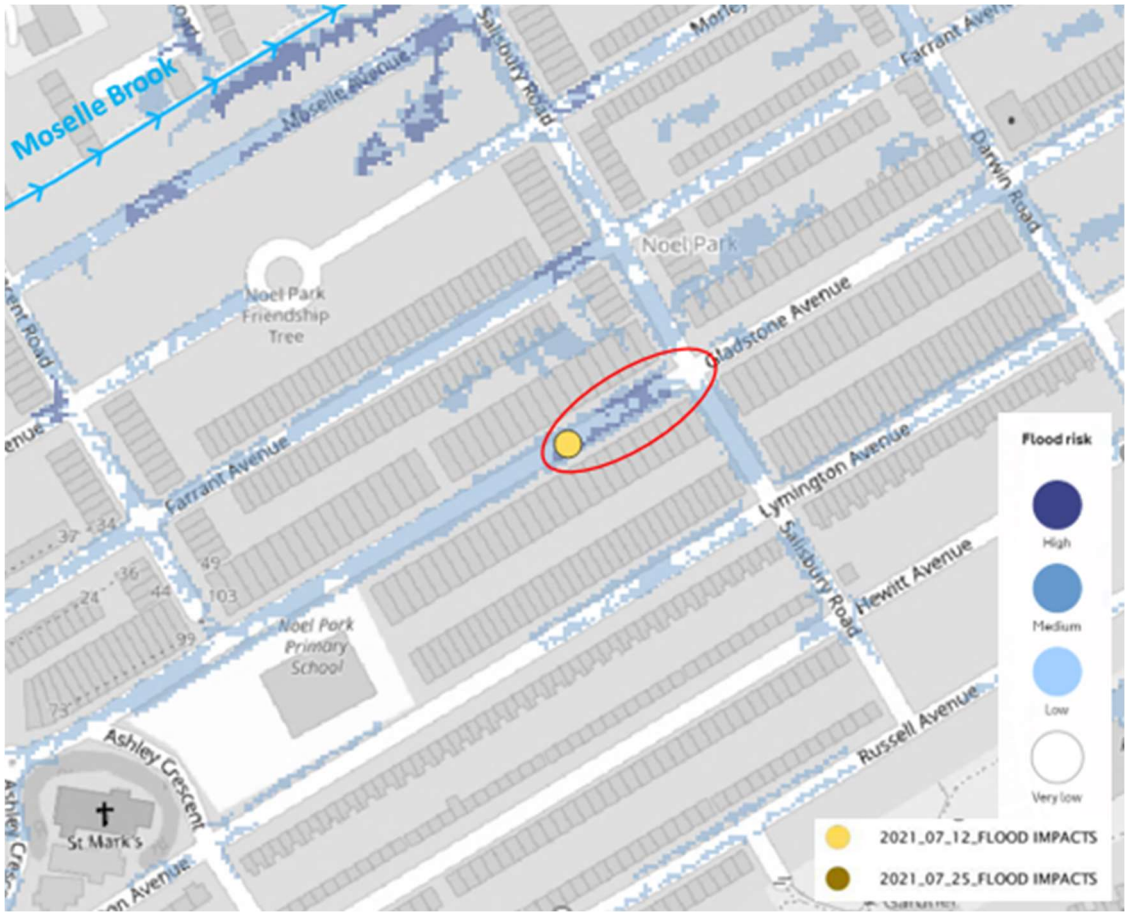
- Haringey Council to investigate the provision and performance of the gullies along Bury Road. At present there is only one gully pot evident at this location.

5.6 Gladstone Avenue

Figure 5-10 Site Location

Location	Gladstone Avenue

Location Plan:



5.6.1 Summary of Impact

12th July 2021

Flooding at Gladstone Avenue was reported on 12th July, to which Haringey Council responded. The initial report was recorded as flooding of the highway. The flood report schedule indicates that a 'new drainage location' was to be added at this location in response to the flooding.

25th July 2021

There was no flooding reported on 25th July in this area.

5.6.2 Site Context

Gladstone Avenue is a residential street which falls gently to the northeast between approximate elevations of 18mAOD and 17mAOD. The street comprises a series of speed humps along its length, and the junction with Salisbury Road is a raised table. This topography corresponds with the surface water flood risk map shown in Figure 5-10, in which it is suggested that surface water accumulates near the junction of the two carriageways.

5.6.3 Existing Drainage and Watercourses

Asset records indicate that a 381mm diameter surface water runs through this section of Gladstone Avenue, which increases to 457mm diameter near its junction with Salisbury Road. The road is drained by a traditional gully system.

The DWMP model shows that surface water sewers throughout Gladstone Avenue is at risk of surcharging during a 1 in 2 year storm.

1 no. gully is located at the foot of the raised table junction, on the southern side of Gladstone Avenue. There are no gullies at the base of the raised table junction on the northern side.

5.6.4 Flood History

Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N22 6 postcode area, as of 2010.

5.6.5 Potential Flood Mechanisms

The lack of anecdotal or photographic evidence, as well as the limited information on the Haringey flood report schedule, makes it difficult to identify flood mechanisms with any certainty. It is possible that volume of the rainfall meant that surface water was unable to enter the highway drains fast enough and accumulated on Gladstone Road at the foot of the raised table junction, flooding the carriageway. The receiving capacity of the public sewer may have contributed to the flooding based on the DWMP model output, but further investigation is required to confirm this.

5.6.6 Responses to Flooding

Haringey Council:

- No confirmation of blockages on record, and the intention is to install a new drainage location in this area.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No calls were recorded by LFB for this location.

5.6.7 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

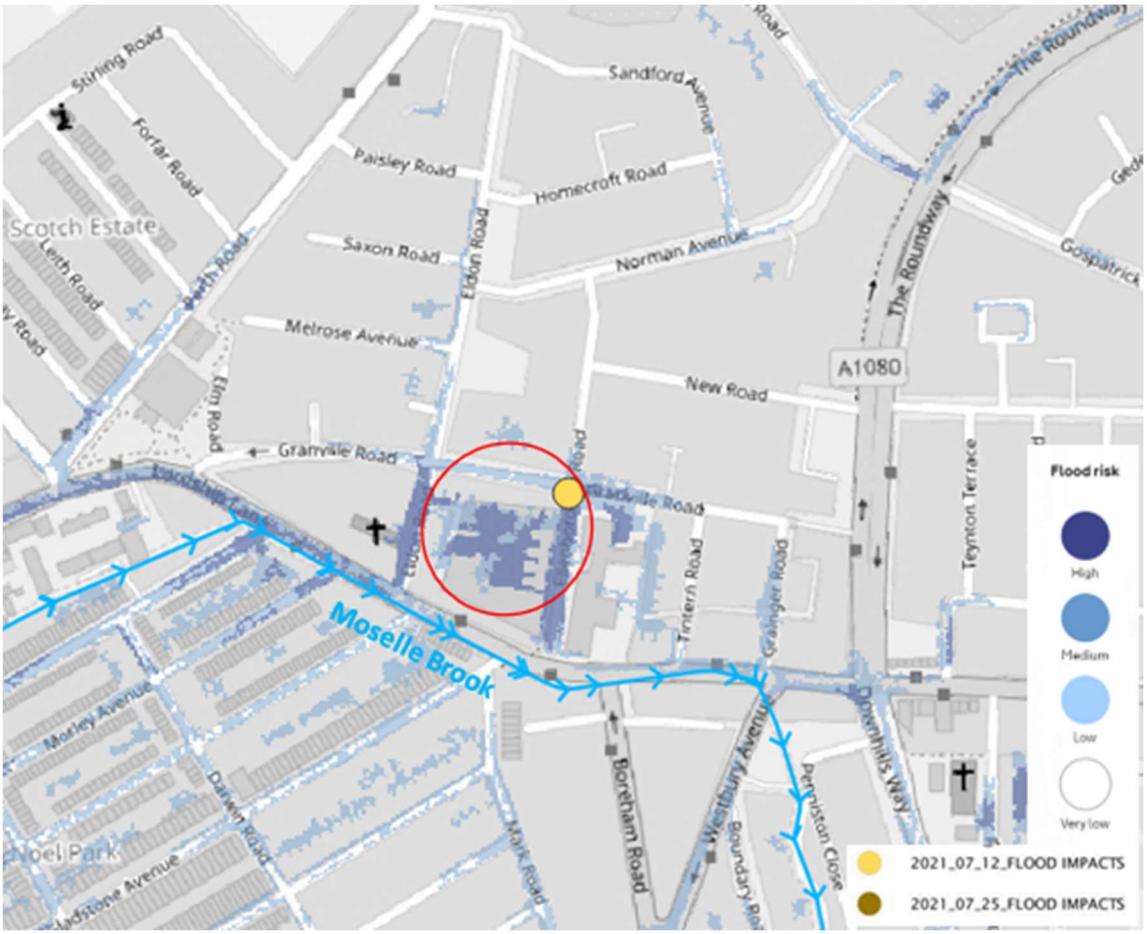
- Haringey Council should further investigate the performance of the gullies at topographic low spots along Gladstone Road to ensure that they are working at full capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.
- Haringey Council to review highway drainage and evaluate requirement for gully pots to the north of the raised table.

5.7 Lordship Lane Primary School

Figure 5-11 Site Location

Location	Lordship Lane Primary School

Location Plan:



5.7.1 Summary of Impact

12th July 2021

Flooding at Lordship Lane Primary School was reported on 12th July. The initial report was recorded as 'longstanding issues' and does not indicate that any further action was taken.

The school was contacted directly for more details of the flooding. The head teacher indicated that some rooms flooded due to blocked roof gutters. The head teacher also noted that Ellenborough Road was completely flooded.

25th July 2021

There was no flooding reported on 25th July in this area.

5.7.2 Site Context

Lordship Lane Primary School is located on Lordship Lane. The EA online mapping places the school grounds, as well as the adjacent Tintern Road, Ellenborough Road and Granville Road, in an area of high surface water flood risk.

5.7.3 Existing Drainage and Watercourses

Asset records indicate 299mm and 305mm diameter surface water sewers in minor roads surrounding the school, which appear to connect to the 1013mm diameter culverted Moselle Brook running under Lordship Lane.

The DWMP model shows that surface water sewers throughout Ellenborough Road is at risk of surcharging during a 1 in 2 year storm.

The carriageways are drained by a traditional gully system. Correspondence with Haringey Council indicates that the 'longstanding issues' referred to in the initial report is referring to drainage misconnections from the school directly into the Moselle Brook culvert. Though not the primary cause of flooding in this instance, this would need to be verified and rectified as a matter of urgency.

5.7.4 Flood History

Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N22 5 postcode area, as of 2010.

5.7.5 Previous flood studies

Lordship Lane Primary School is located within CDA Group 4_075 ("Lordship Lane and Ellenborough Road, Noel Park"). The CDA analysis shows that flooding up to 0.5m depth occurs at this localised low point in topography. The CDA analysis also highlights the presence of the culverted Moselle Brook running beneath Lordship Lane on the southern edge of the CDA.

5.7.6 Potential Flood Mechanisms

The primary cause of flooding within the school building was confirmed by the head teacher to be caused by blocked roof gutters. There was no confirmation of flooding of the school grounds from surface water.

5.7.7 Responses to Flooding

Haringey Council:

- The council is aware of the longstanding issue at the school.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No calls were recorded by LFB for this location.

5.7.8 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to ensure that gully pots along Ellenborough Road are targeted for cleansing on a cyclic maintenance regime.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

6 SUMMARY

The flooding that occurred on 12th July and 25th July 2021 in Wood Green was caused by storms ranging from a 1 in 2 to a 1 in 30 year return period rainfall event, and in some locations potentially up to a 1 in 70 year return period rainfall event. Traditional pipe and gully pot drainage systems were historically not designed to deal with the rainfall intensity / severity experienced on these dates.

Other factors have been identified which may have caused flooding at the respective locations identified within this report, which include;

- Propagation of flood waters by passage of vehicles through flood waters causing bow waves.
- Blocked gully pots observed during the site visits.
- Lack of capacity within surface water sewers (as noted by recorded reports of flooding and outputs from DWMP models)

Turnpike Lane underground station was noted to be affected from closure on both dates of flooding.

Thames Water were unable to provide any location specific data or actions carried out in relation to flooding for a number of the locations considered by this Section 19 assessment.

Thames Water has undertaken an internal review, (which considers the wider London catchment) to identify the actions taken ahead of, during and after the July 2021 storm events. This review concluded that the two key areas in which customers were let down were the initial response on the ground and lack of Thames Water customer contact provision during the events.

A further Independent Review has been commissioned by Thames Water into the causes and impacts of flooding, with a detailed assessment of sewer performance, which is due to be completed by Spring 2022.

It is understood that there are no current programmes for Thames Water to invest in upgrading local drainage networks to provide additional sewer capacity in the Wood Green area.

6.1 Next steps

Haringey Council has committed to programme and undertake future gully cleaning throughout Haringey which is proposed to be completed by Summer 2022.

Other actions are recommended within the body of this report and are summarised below:

- The outcomes of the Thames Water independent review (due 2022) to be shared with other RMAs to ensure that mechanisms of flood can be better understood and any actions identified from the review can be developed jointly with other RMAs (as appropriate).
- Priority should be given by Haringey to cleaning of gully pots in areas of known surface water flood risk.
- Haringey Council should consider localised temporary road closures or diversions and barriers are recommended in high-risk areas with low profile kerbs to reduce ingress of floodwaters onto footways and into properties where risk of internal flooding is caused by bow wave affect from the movement of vehicles through flood waters.
- Homeowners and businesses should be made aware of their risk of flooding and encouraged to investigate flood resilience and resistant measures to protect affected properties. Haringey Council offers advice through its website[9]. This link also provides information on how to sign up for flood warnings.
- Haringey Council to consider further retrofitting of SuDS to manage excess storm runoff.

[9] Be prepared for flooding. Haringey Council, 2021, available at https://www.haringey.gov.uk/environment-and-waste/major-emergencies/drainage-and-flooding/be-prepared-flooding, accessed 12th November 2021.

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Section 19 Flood Investigation Report

South Tottenham, London Borough of Haringey

M01600-15_DG01 | January 2022

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Abbreviations used within the report

CDA	Critical Drainage Area
DWMP	Drainage and Wastewater Management Plan
FEH	Flood Estimation Handbook
FWMA	Flood and Water Management Act 2010
LLFA	Lead Local Flood Authority
mAOD	Metres Above Ordnance Datum
RMA	Risk Management Authority
SFRA	Strategic Flood Risk Assessment
SWMP	Surface Water Management Plan
TW	Thames Water

CONTENTS

1 INTRODUCTION

1.1 Terms of Reference

McCloy Consulting have been instructed on behalf of Haringey Council to undertake an investigation into flooding, in accordance with Section 19 of the Flood and Water Management Act, 2010.

1.2 Legislative background

Where a significant flood event has occurred and the responsibility for managing the future risk is unclear, Haringey Council may conduct a formal flood investigation, under Section 19 of the Flood and Water Management Act, 2010. The aim of this investigation is to identify which authority has responsibilities and whether they are proposing to respond. The results of the investigation will be published.

As the Lead Local Flood Authority (LLFA) for the study area, Haringey Council has a duty to investigate flood incidents as set out in Section 19 of the Flood and Water Management Act, 2010 (the Act). The Act states:

(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.

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:

a. Heavy rainfall

b. A river overflowing or its banks being breached

c. A dam overflowing or being breached

d. Tidal waters

e. Groundwater, or

f. Anything else (including any combination of factors).

But "flood" does not include

g. flood from any part of a sewerage system, unless caused by an increase in the volume of rainwater, entering or affecting the system, or

h. a flood caused by a burst water main

1.3 Defining the study extents

Two flood events were experienced in July 2021.

- 31 reports of flooding to Haringey Council recorded following rainfall events on 12th July 2021.
- 47 reports of flooding to Haringey Council recorded following rainfall events on 25th July 2021.

Widespread flooding was experienced across Haringey for both rainfall events. Haringey Council has proposed that reported flood incidents be split into three geographic areas of Wood Green, Hornsey Crouch End and South Tottenham. These areas describe the main concentrations of flood reports across the catchment taking into account both dates. This report covers the **South Tottenham** geographic area.

2 STUDY AREA

2.1 Study Location and Context

South Tottenham is located in the east of the London Borough of Haringey. It borders the London Borough of Waltham Forest to the east. Figure 2-1 below shows the extent of the study area. Bounding areas of north Tottenham and Wood Green are included in this report for the purposes of the investigation.

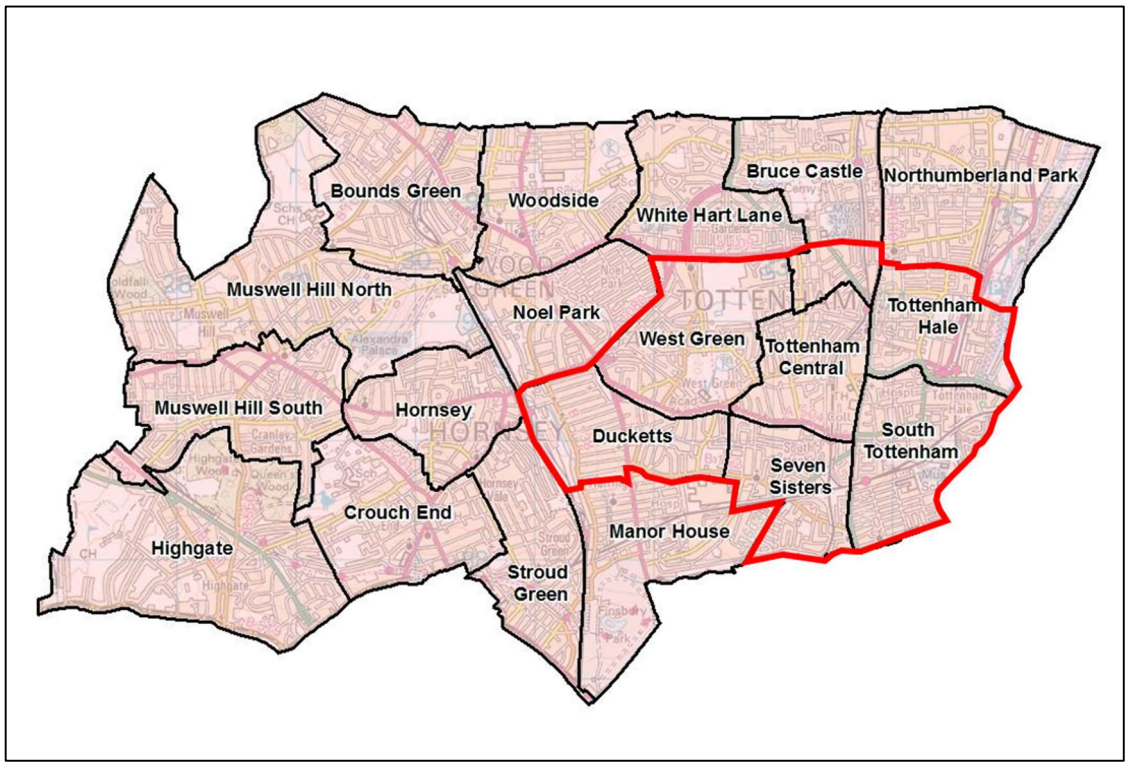


Figure 2-1 Map of Haringey showing study area extents

Tottenham has been identified in the London Plan and Haringey's Strategic Policies Local Plan[1] as a key regeneration area within London capable of accommodating significant growth.

South Tottenham is served by two underground stations, three overground stations and one national railway stations, which are located at Bruce Grove, Seven Sisters, South Tottenham and Tottenham Hale. The area is served by strategic roads including the A10, High Road and Seven Sisters Road.

2.2 Topography

Tottenham in general falls eastward towards the River Lea. The mainline railway through Wood Green in the west forms higher ground with White Hart Lane and Tottenham Recreation Ground in the north, with elevations ranging from 34m Above Ordnance Datum (AOD) to 40mAOD here. Land closer to the River Lea in the east ranges from 8mAOD to 10mAOD. There is a local high point in the residential area between Lordship Recreation Ground and Downhills Park, circa 30mAOD at its highest elevation.

[1] Haringey Strategic Policies Local Plan, 2013, Haringey Council:UK

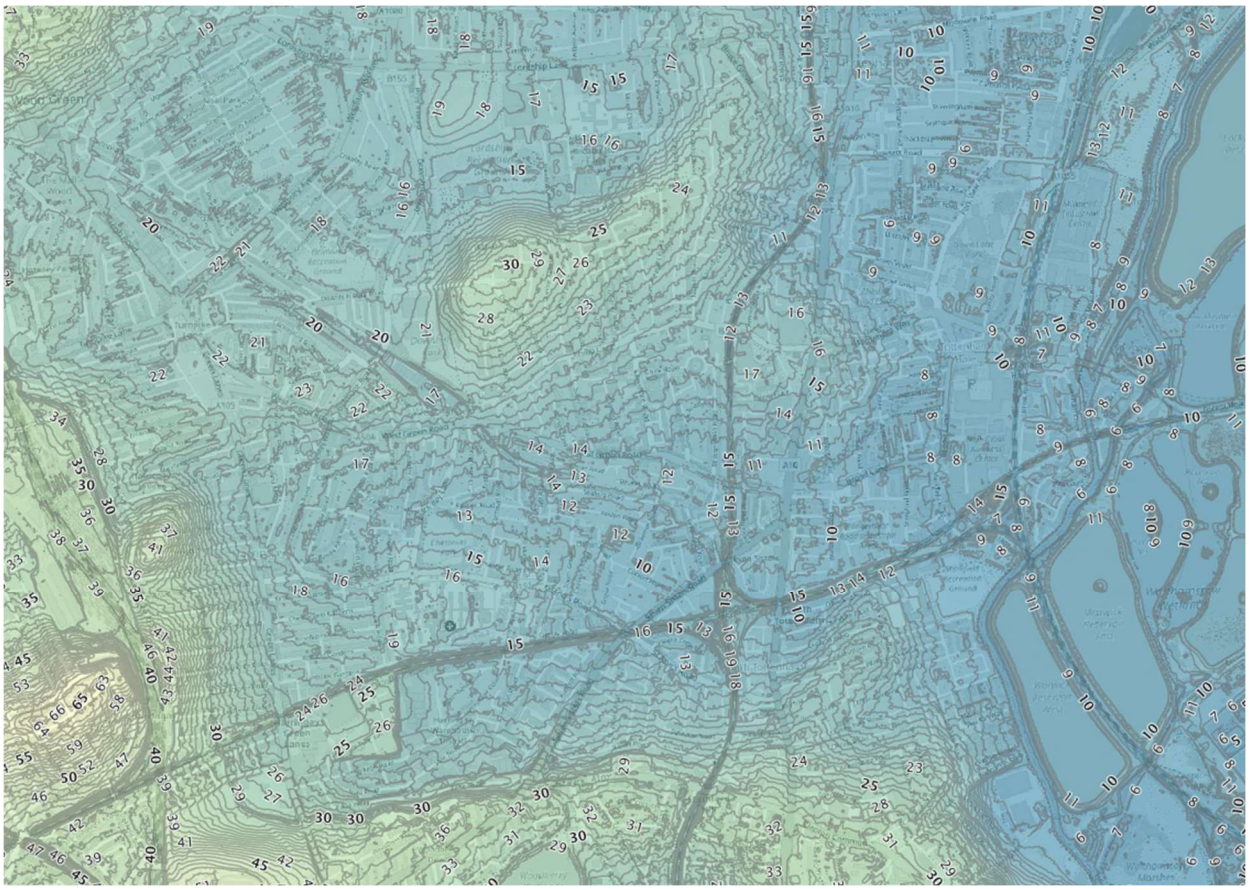


Figure 2-2 Topography of South Tottenham within London Borough of Haringey

2.3 Geology and Soils

Historic borehole logs within the study area were reviewed using British Geological Survey (BGS) database[2].

Borehole Grid References TQ39SW115/B, TQ38NW250 and TQ38NW76 identified similar ground conditions generally described as follows;

Topsoil and Made Ground (silty clay with fragments of brick, concrete, rootlets and ash) was encountered to up to 1.0m below ground level (bgl), with London Clay (stiff brown, occasionally grey silty and sandy clay) encountered beyond that to over 40m bgl. The BGS database indicates that areas of Taplow Gravel, Kempton Park Gravel, Enfield Silt and Alluvium may be present within Bruce Grove and eastern parts of Tottenham Hale.

2.4 Watercourses

South Tottenham lies within the Thames Catchment, and in particular drains to the Lower Lee.

Haringey's Strategic Flood Risk Assessment (SFRA)[3] details how a number of watercourses within the borough are culverted and commonly described as 'lost'.

The currently known alignment of watercourses local to South Tottenham is shown in Figure 2-3. Note that the New River is a controlled waterway with Thames Water having responsibility under the FWMA.

[2] Geology of Britain Viewer, 2021, British Geological Survey: UK. Available at Geology of Britain viewer | British Geological Survey (BGS) Access 30/11/2021

[3] Strategic Flood Risk Assessment, 2015, Haringey Council: UK. Available at: http://www.haringey.gov.uk/sites/haringeygovuk/files/2012s6315_haringeycouncil_sfra_v4.0_0.pdf Accessed on 30/11/2021

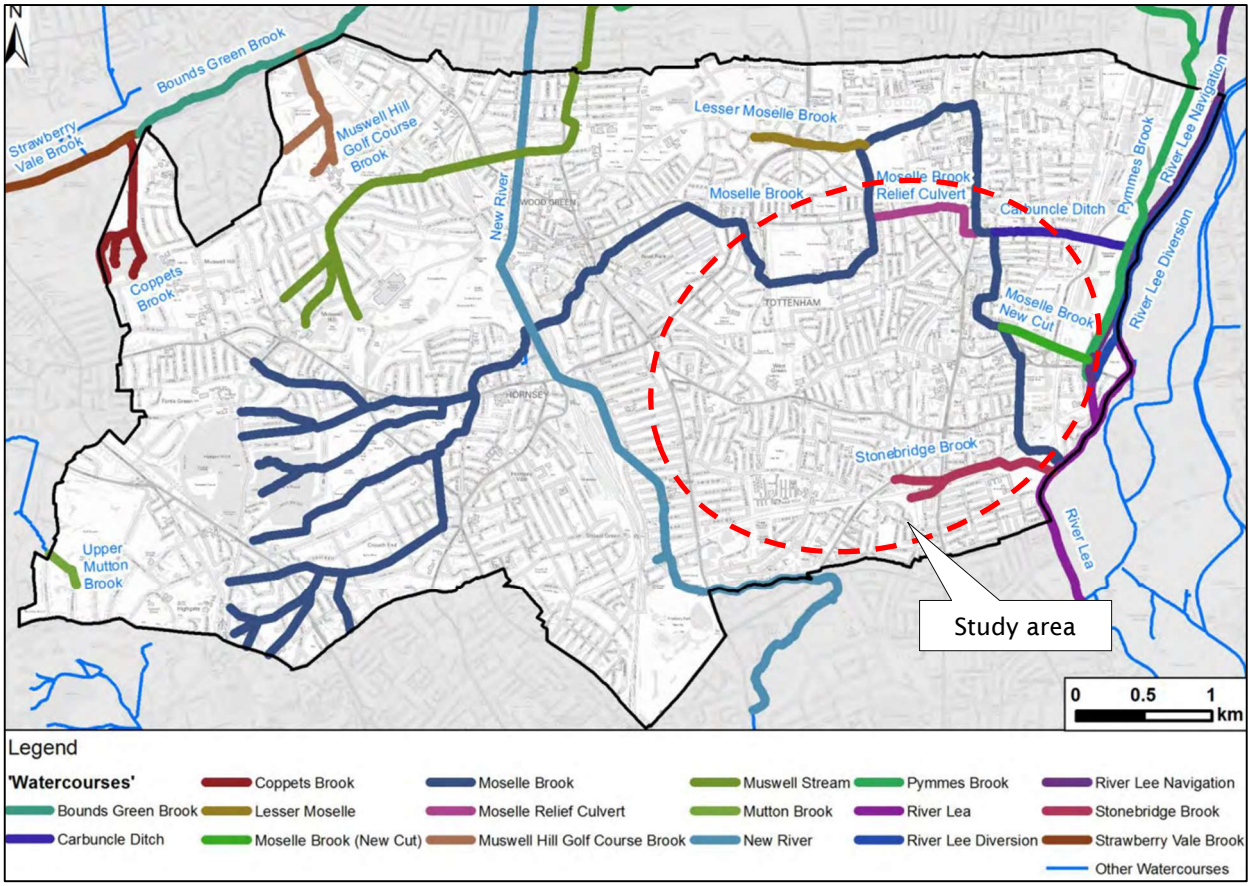


Figure 2-3 Overview of watercourses in Haringey and surrounding areas (from Haringey SFRA)

The following table indicates who is responsible for watercourses in Haringey;

Table 2-1 Watercourse responsibility in the London Borough of Haringey[4]

Watercourse	Classification	Responsibility under the FWMA
Moselle Brook	Main River	Environment Agency
Stonebridge Brook	Main River	
Pymmes Brook	Main River	
River Lee/River Lee Navigation	Main River	
Unnamed ditches	Ordinary Watercourse	Haringey Council
New River	Artificial Watercourse	Thames Water

[4] Surface Water Management Plan (SWMP), 2011, Haringey Council: UK. Available at: https://www.haringey.gov.uk/sites/haringeygovuk/files/dlt2_gp4_haringey_swmp_draft_v2.0_0.pdf Accessed on 02/11/21

2.5 Sewerage

The majority of South Tottenham is urban development of residential and commercial properties. The area therefore has a high percentage of impermeable area due to buildings, car parks, hard standings and highways.

The sewer network is separate, with a percentage of storm runoff known to contribute to the foul system. The public sewers are owned and maintained by Thames Water.

For the purposes of the Section 19 investigation, Thames Water has provided access to the Practitioner Portal of the Drainage and Wastewater Plan (DWMP). The DWMP portal provides modelling outputs from Thames Water's Capacity Assessment Framework, which includes identifying areas where sewers would be at capacity during a 2 year storm, where potential escapes from manholes would occur during a 30 year storm and the risk of flooding during a 50 year storm. This information has been used to further analyse the possible flood mechanisms across the study area.

2.6 Highway Drainage

The public highway generally drains to the public sewer network in this area via road gullies and pipework. The 'red routes' through Tottenham (the A10, Seven Sisters Road, Broad Lane and Monument Way) are maintained by Transport for London (TfL), with the remaining owned and maintained by Haringey Council as the local highway authority.

2.7 Flood Risk Mapping

The Environment Agency (EA) online maps provide readily available flood risk data within the study area. No new flood risk mapping has been produced to support this assessment.

2.7.1 Risk of Flooding from Rivers and Sea

Most of the entire study area is within Flood Zone 1 whereby the annual risk of flooding, from either rivers or the sea, is less than 0.1%. A section of Lordship Recreation Park and the eastern extents of Bruce Grove and Tottenham Hale are shown to be within Flood Zone 2, whereby the annual risk of flooding, from either rivers or the sea, is between 0.1 and 1.0%.

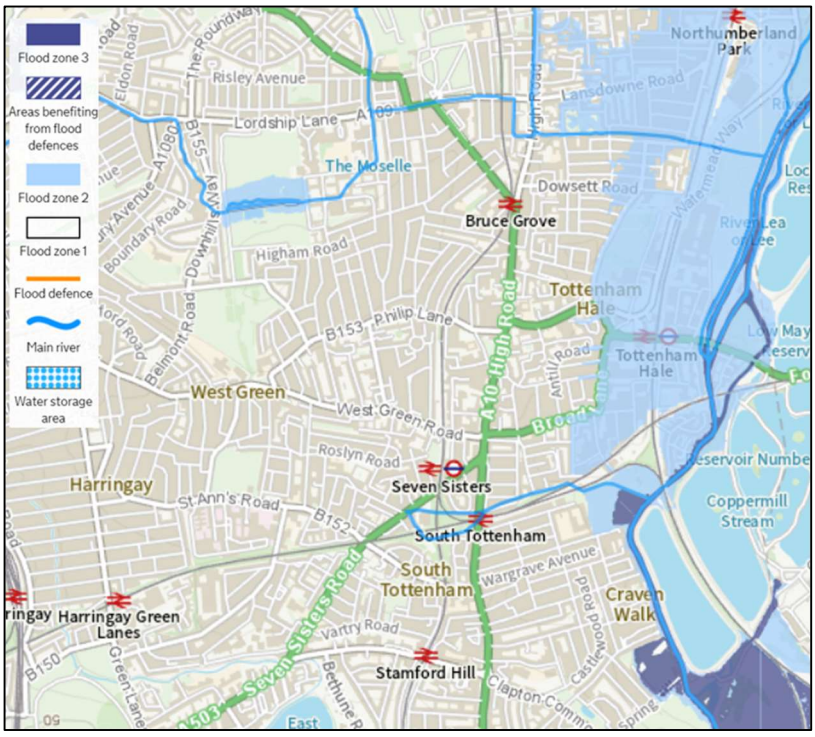


Figure 2-4 Flood Map for Planning

2.7.2 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 High Road, Lordship Recreation Ground, Broad Lane, and residential areas north of St Ann's Road and Seven Sister Road. Areas of low to medium risk are indicated on the eastern extents of Bruce Grove and Tottenham Hale.

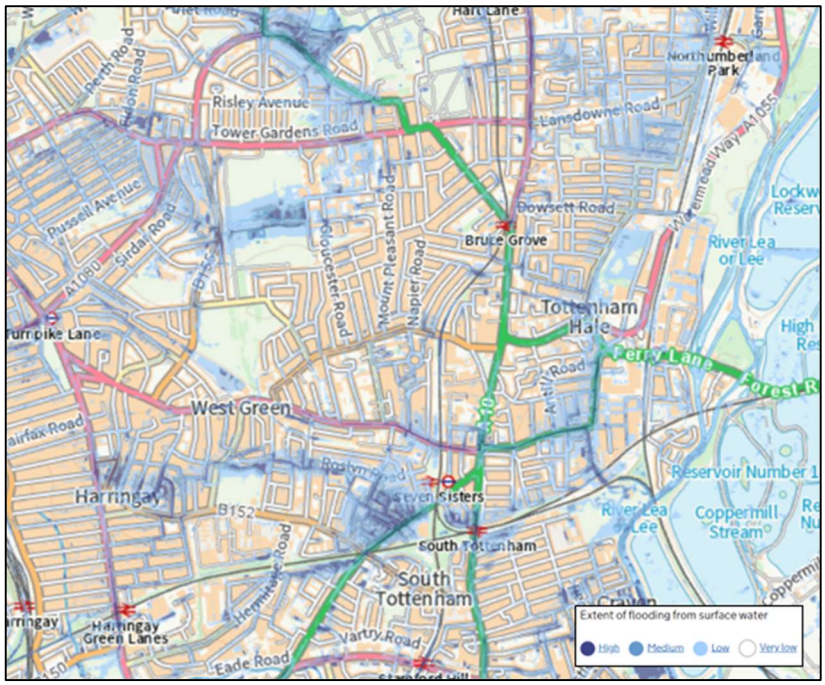


Figure 2-5 Surface Water Long Term Flood Risk Map

3 RISK MANAGEMENT AUTHORITIES

3.1 Haringey Council

Haringey Council is the LLFA for the area and the highway authority. The Flood and Water Management Act 2010 gives LLFAs powers and duties for the strategic overview of local flooding and for some flood risk management functions including:

- A duty to investigate flooding;
- A duty to maintain a register of significant structures and features;
- Powers to regulate ordinary watercourses;
- A duty as a statutory consultee to review drainage strategies and surface water management provisions associated with applications for major development.

As the highway authority, Haringey Council is responsible for the maintenance and operation of drainage gullies and the pipework connecting these to the public sewers for the proper function of highways and safety of highway users.

Haringey Council has contracted Marlborough Highways to support it on all aspects of highway infrastructure including carriageway, footway and cycleway maintenance, junction improvements, traffic calming measures, gully, drainage works and sustainable drainage systems (SuDS). The five year contract began in 2020.

3.2 Environment Agency

The EA is responsible for taking a strategic overview of the management of all sources of flooding and coastal erosion. The EA also has responsibility for managing the risk of flooding from main rivers, reservoirs and estuaries.

3.3 Statutory Undertaker for Public Sewers

Thames Water has a duty as a sewerage undertaker under Section 94 of the Water Industry Act 1991, to provide and maintain sewers for the drainage of buildings and associated paved areas within property boundaries. It has responsibility for any flooding which is directly caused by its assets i.e. its water or sewerage pipes. It also has a duty to cooperate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities.

3.4 Transport for London

Transport for London (TfL) is responsible for the primary roads, underground, rail networks (London Overground and TfL Rail), buses, taxis, trams and river services in London. In Haringey, the primary roads, or 'Red Routes' which TfL is responsible for include the A406, the A10, Broad Lane, Monument Way and parts of Archway Road and Seven Sisters Road.

3.5 Riparian Landowners

Private landowners have responsibilities for the maintenance and upkeep of ordinary watercourses, including any associated culverts, and the bed / banks of any watercourse adjacent to or within their land. They should clear away any debris from the watercourse or culvert even if it did not originate from their land.

3.6 Residents and Property Owners

Private landowners are responsible for the maintenance and operation of drainage assets and connecting pipework located on privately owned roads and footways, car parks and other hard standings and for building surface water drainage.

Residents and property owners who know they are at risk of flooding have responsibilities to mitigate the risk of flood damage to their property as far as is reasonably practicable[5]. They should take measures to protect themselves and their property when flooding is imminent. Residents and property owners have the right to defend their property as long as they do not subsequently increase the risk of flooding to other properties.

Business owners should make a flood plan for their business. There are measures that can be taken to reduce the amount of damage to business premises caused by flooding and properties at risk should be insured.

[5] Living on the Edge. Environment Agency, 2015, available at https://www.wlma.org.uk/uploads/EA_Guide_to_rights_and_responsibilities_of_riverside_ownership.pdfhttps://www.wlma.org.uk/uploads/EA_Guide_to_rights_and_responsibilities_of_riverside_ownership.pdf, accessed 15th November 2021

4 SUMMARY OF RAINFALL EVENTS

4.1 12th July 2021

At 10:04 on 11th July 2021 (and updated 08:54 on 12th July 2021), the Met Office issued a Yellow warning of Rain expected between 10:00 and 23:59 on 12th July 2021. The warning covered the East of England, London, South East England and South West England.

Rainfall data was obtained from the EA for review from gauges located in Hornsey (grid reference TQ30557 89795), Brent, (grid reference TQ20836 87013) and Wanstead (grid reference TQ 41544 88234).

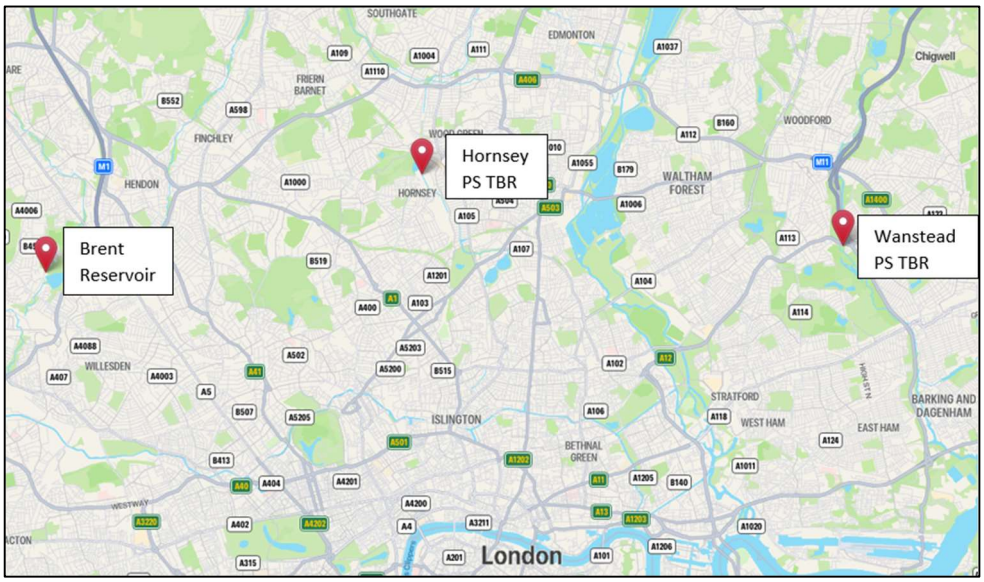


Figure 4-1 Locations of rainfall gauges

The most significant rain was recorded at Brent Reservoir between 17:00pm and 19:00pm, which recorded 7.6 mm of rainfall within this period. This rainfall is estimated as 1 in <2 year return rainfall event based on comparison of data obtained from the Flood Estimation Handbook. A total of 11.6mm was recorded for the whole day, with 10.2 mm of this falling over 3.5 hours. The rain gauge at Wanstead recorded 8mm over 24 hours, and the gauge and check gauge at Hornsey gave unreliable readings on the day due to apparatus blockages.

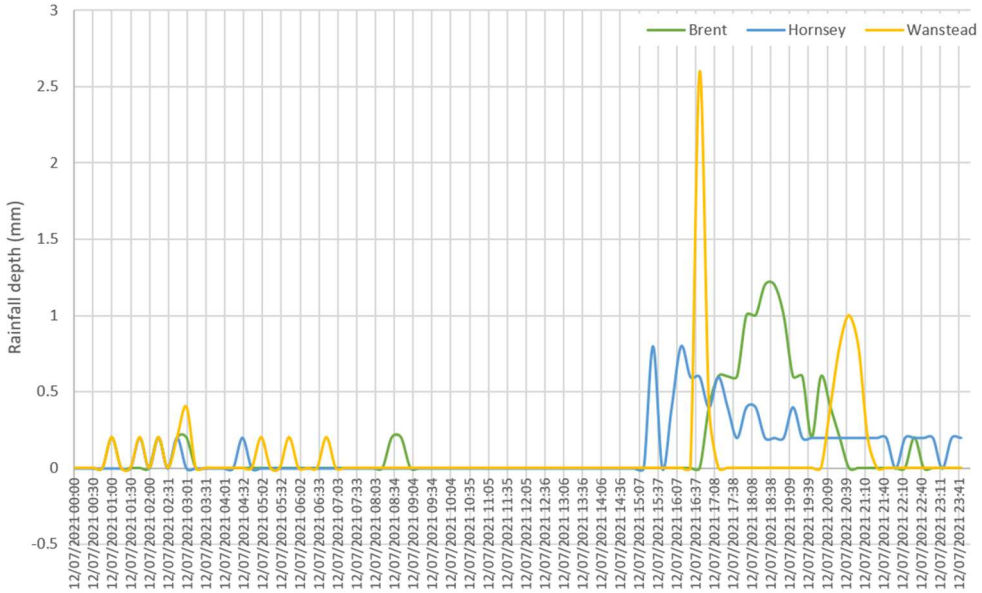


Figure 4-2 Rain gauge data, 12th July 2021

The relatively low rainfall recorded above is not consistent with the flood reports and anecdotal evidence provided from the area. The Hornsey gauges were blocked on retrieval of data and the recordings conflict with the Thames Water analysis of the rainfall event, which was presented at a recent workshop related to the floods[6], and indicated that the district received rainfall return periods ranging from a <5 year to a <20 year rainfall event. The areas in which the gauges are located in Brent (Borough) and Wanstead (London Borough of Redbridge) did not experience the same intensity of rainfall experienced elsewhere, which concurs with the relatively low estimated rainfall return period derived from the rain gauge data for these locations.

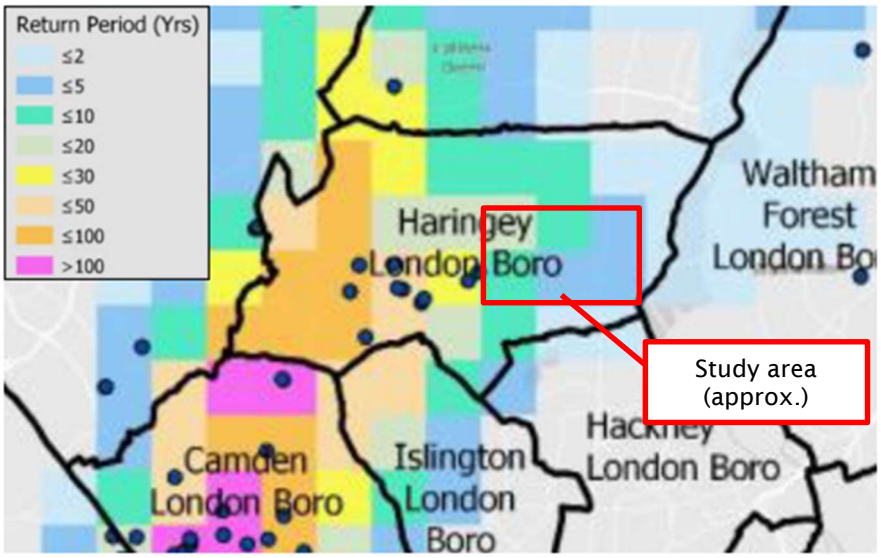


Figure 4-3 Rainfall Return Period and Report Flooding Incidents, 12th July 2021 (RaRa data using FEH99).

4.2 25th July 2021

The Met Office issued an Amber warning of Thunderstorm at 14:33 on 25 July 2021, expected between 14:33 and 19:00 on 25th July 2021, covering East of England, London and South East England.

The most significant rain being recorded at the selected gauges was between 14:15 and 15:45 at Wanstead. The rain gauge recorded 49 mm of rain within this time period, which was estimated to be a 1 in 70 year rainfall return event. A total of 54 mm was recorded for the whole day. The rain gauges at Brent Reservoir and Wanstead recorded 7.6mm and 22.8mm, respectively on this date.

[6] Supporting Section 19 Investigations, Workshop, 28th September 2021. Thames Water: UK

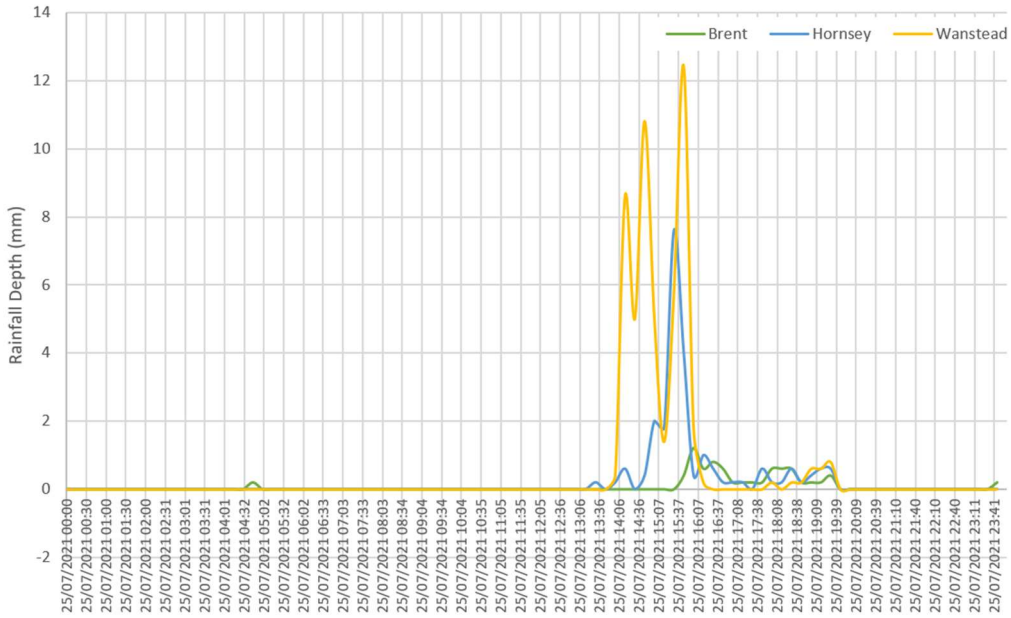


Figure 4-4 Rain gauge data, 25th July 2021

The Thames Water workshop data indicated that the district received rainfall return periods ranging from a <20 year to a <100 year rainfall event.

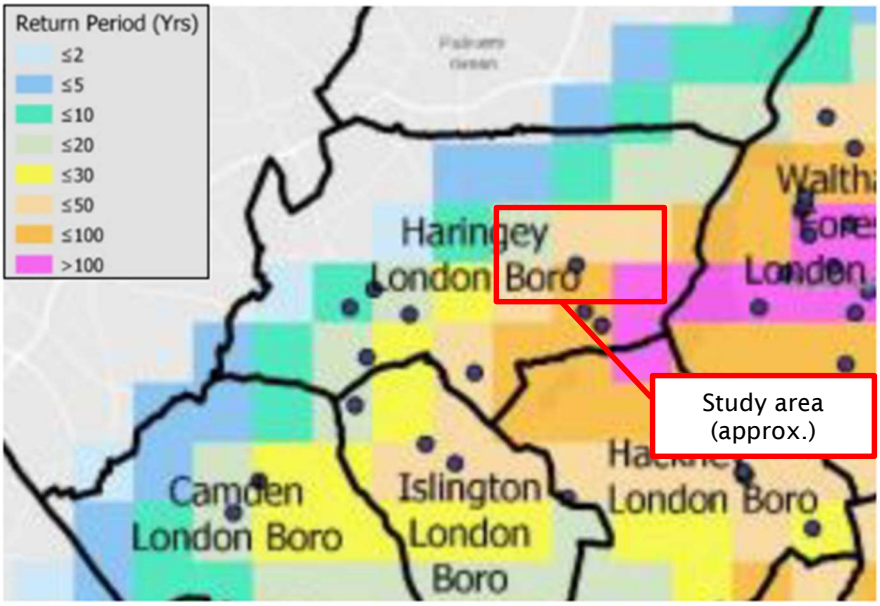


Figure 4-5 Rainfall Return Period and Report Flooding Incidents, 12th July 2021 (RARA data using FEH99).

5 ANALYSIS OF FLOOD EVENTS

5.1 Records of Incidents

Table 5-1 summarises the reports of flooding received by Haringey Council, and reactionary works that were undertaken by Haringey Council.

It is noted that the following have been screened out of further investigation;

- flood reports from single properties (not in proximity to other properties)
- locations where it is clear from the report that flooding was caused by internal drainage failure (for example a leaking roof).

Flood reports that have been screened out have been denoted by * beside the location name in the following table.

To support this investigation, Haringey Council has been provided with flood reports collated by London Fire Brigade (LFB) and Thames Water.

LFB received a total of 99 calls on 12th July 2021 and 58 calls on 25th July 2021 across the borough. Thames Water received 17 calls on 12th July 2021 and 13 calls on 25th July 2021 across the borough. LFB and Thames Water responses to individual flood locations are noted in the location specific sections of this report.

Table 5-1 Schedule of report flood incidents in South Tottenham

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area
Bruce Grove				
Dowsett Road	25/07/2021	Flooding	None recorded	None
Albion Road	25/07/2021	Flooding	None recorded	
High Road	25/07/2021	Minor flooding into c.10 businesses on High Road	None recorded	
500/508 High Road	26/07/2021	Flooding to business	None recorded	
Forster Road	25/07/2021	Flooding	None recorded	
South Tottenham / Broad Lane				
Lemsford Close, Rubner House	25/07/2021	Flooding	None recorded	None
Alan Barclay Close	26/07/2021	Garden flooded	None recorded	

Broad Lane	25/07/2021	None recorded	Clear gullies	
Markfield Road	25/07/2021	Flooding	Clear gullies	
High Cross Centre	25/07/2021	Flooding	None recorded	
Armadale Close*	25/07/2021	Loss of electricity	HFH to visit	
Armadale Close	25/07/2021	Flooding	None recorded	
Ferry Lane*	26/07/2021	Power outage	None recorded	
St Ann's / Seven Sisters				
Seven Sisters Road / St Ann's Road	25/07/2021	Flooding	None recorded	
Clarence Road	25/07/2021	Blown manhole cover and sewage in street	Thames Water visiting 27/07/21	
Henrietta House, Chisley Road*	26/07/2021	Communal balcony flooded	None recorded	Group 4_057
Culvert Road, backs onto Russell Road	25/07/2021	Minor flooding	Clear gullies	
Edgecot Grove	25/07/2021	Flooding	HFH / Haringey Council to review	
Milton Road Estate				
Milton Road Estate	25/07/2021	Flooding	HFH to check	
Willow Walk	25/07/2021	Flooding	None recorded	None
Langham Road	25/07/2021	Flooding	None recorded	
Broadwater Farm				

Willian Road	26/07/2021	Flooding report in houses	None recorded	Group 4_063
Broadwater Farm	25/07/2021	Flooding	None recorded	
Other Locations				
Larkspur Close	12/07/2021	Flooding in highway	Visited and no action taken due to water receded	Group 4_063
	25/07/2021	-	Extra check due to known flood risks	
West Green Road	26/07/2021	Heavy flooding	None recorded	None
Crowlands Primary School*	13/07/2021	Existing issue with pipe	Existing issue with pipe and not flooded by rainwater to best knowledge	Not applicable
The Grove School*	13/07/2021	Flooded rooms	None recorded	Not applicable
Green Lanes / Williamson Road	25/07/2021	Flooded and lifted manhole covers	None recorded	Group 4_057
66 Rothbury Walk*	26/07/2021	Flooded balcony	HFH to review	Not applicable
Park Lane*	25/07/2021	None recorded	None recorded	Not applicable
Philip Lane	25/07/2021	Minor flooding	Check gullies	Not applicable
Fairfax Road*	25/07/2021	Flooding	Clear gullies, cement	Not applicable
Lancaster Road*	25/07/2021	Flooded basement	None recorded	Not applicable

Figure 5-1 presents an overlay of flood reports from Haringey Council's Reported Flooding Impacts Mapping and highlights the areas of interest where an increased number of flood incidents were reported. Note that screened out locations also appear in this figure.

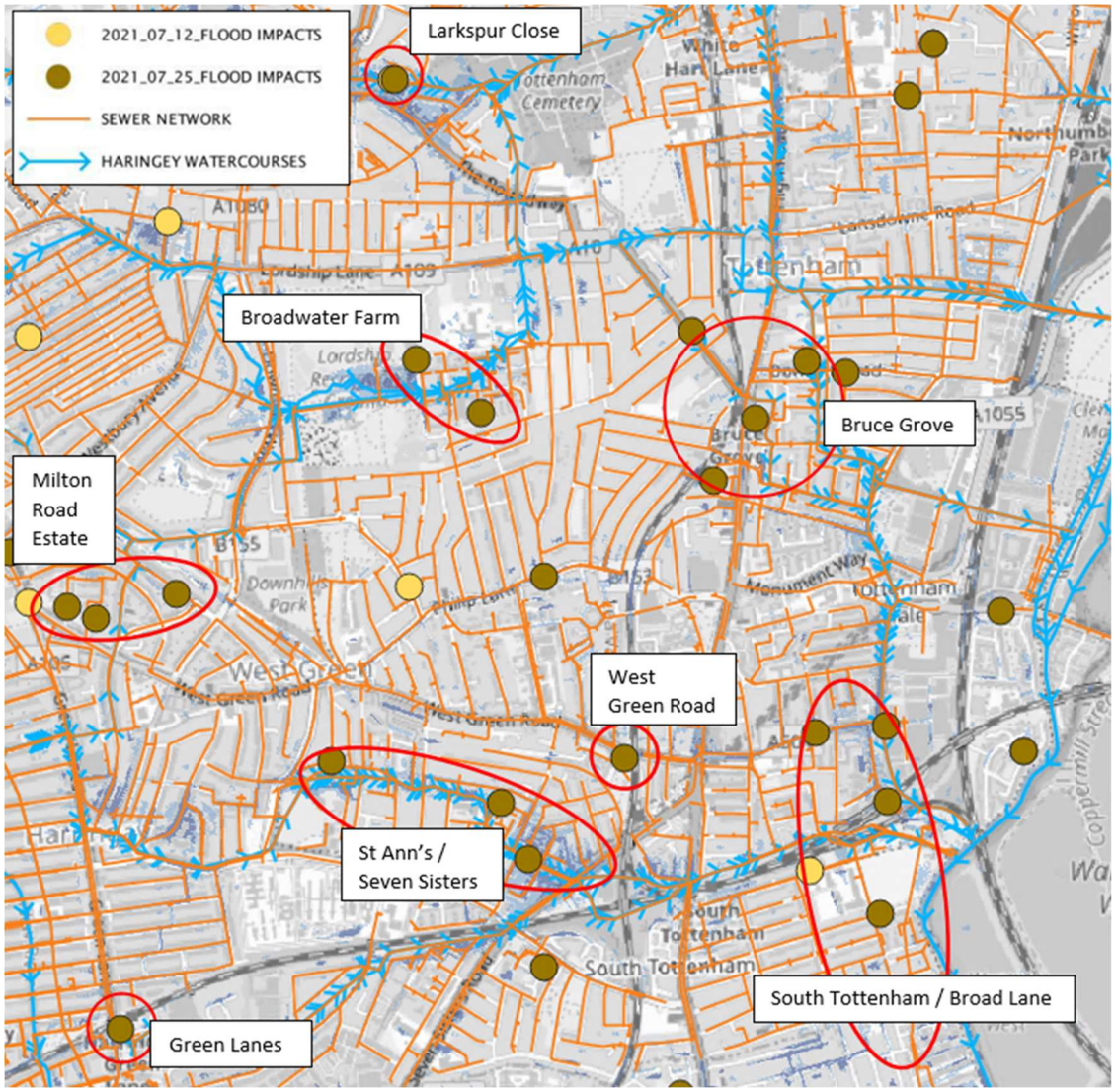


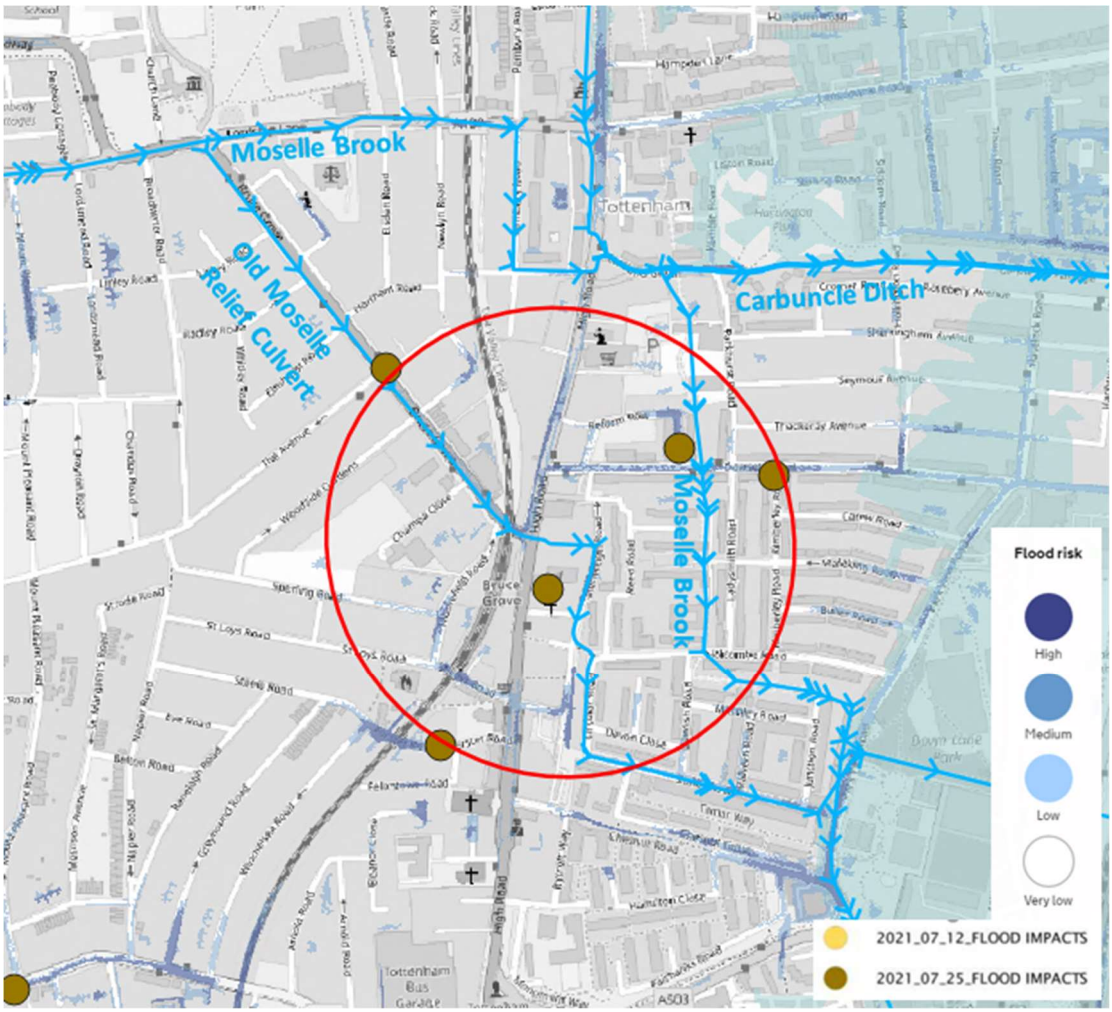
Figure 5-1 Recorded flood impacts and areas of interest in South Tottenham

5.2 Bruce Grove

Figure 5-2 Site Location

Location	Bruce Grove

Location Plan:



5.2.1 Summary of Impact

12th July 2021

There were no reports of flooding received on 12th July 2021.

25th July 2021

LFB received flood related emergency calls from 16:16pm. Calls were received from St Loys Road, Stoneleigh Road and Woodside Gardens. Both residential dwellings and business were affected. Haringey Council received further calls from properties on Albion Road, Dowsett Road and Forster Road. At least 10 businesses along High Road experienced minor flooding of their premises. During a site walkover visit on 28th October 2021, local business owners on Moorefield Road off High Road described flood waters covering the highway on the southern end of Moorefield Road and St Loys Road.

Figure 5-3 Flooding at Forster Road underpass, 25th July 2021

5.2.2 Site Context

Land falls from the west and southwest toward Bruce Grove and High Road, with streets such as A10, Sperling Road, St Loy's Road and Steele Road acting as valleys toward Moorefield Road and High Road. The LiDAR data shows that land falls toward the junction of Dowsett Road and High Road and continues to fall to the east toward the River Lead. The surface water flood risk areas in Figure 5-2 reflect this topography; higher risk areas are shown on Moorefield Road, the lowest part of St Loys Road, High Road between junctions with the A10 and Dowsett Road, Dowsett Road and Albion Road. Forster Road passes under the overground railway, forming a surface water flood risk area at the underpass. During a site walkover on 28th October 2021 it was noted that 2no. gullies are located in the Forster Road underpass.

5.2.3 Existing Drainage and Watercourses

Asset records indicate that the area is served by a network of surface water sewers. Surface water sewers range from 229mm to 900mm.

The DWMP model output indicates that some sections of sewer in the area are at risk of surcharging during a 1 in 2 year rainfall event. These include sewers at the junction of Bruce Grove and High Road, parts of Dowsett Road and roads and streets bounding Down Lane Park east of High Road.

A culverted section of the Moselle Brook flows south through residential streets east of High Road, crossing Mulberry Primary School grounds, Dowsett Road and Holcombe Road before turning toward Down Lane Park. The culvert diameter ranges from 1219mm to 4100 x 2500mm diameter. Asset records indicate that local surface water sewers connect into the culvert; the extent and nature of these would need further investigation. An old relief culvert of the Moselle Brook flows down the A10, crossing High Road and passing down Stoneleigh Road and Circular Road before joining the Moselle Brook at Down Lane Park.

5.2.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records 1 no. instance of flooding in the Bruce Grove area, on Park View Road at the bottom of Dowsett Road. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N17 0 postcode area, as of 2010.

5.2.5 Potential Flood Mechanisms

The site context and anecdotal evidence suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity of the drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low sections of Moorefield Road, St Loys Road and High Road. From here water levels were able to rise, encroaching into adjacent businesses and flowing into adjoining streets to the east. Surface water

accumulated in the localised low spots of Albion Road, Stoneleigh Road and Forster Road, causing flooding of the highway. The surcharging or flooding of the Moselle Culverts may have increased flooding on the carriageways and footways.

The DWMP data does not indicate when sewers would surcharge at events greater than the 1 in 2 year rainfall event. Therefore, further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, the culverts or a combination. Other contributing factors to the extent (depth and magnitude) of flooding include:

- **Blocked gullies**

  A site walkover on 28th October 2021 showed that at least 2 no. gullies along a 100m stretch of the road were blocked. Any blockages would have reduced the capacity for surface water to enter reach the public sewer.

Figure 5-4 Blocked gully outside 490 High Road, 28th October 2021

- **Threshold Heights**

  During the site walkover it was noted that a number of businesses along High Road had flush front door thresholds. This arrangement would allow for surface water to quickly enter properties once the footway had been submerged.

5.2.6 Responses to Flooding

Haringey Council:

- No response works are recorded in the flood report schedule.
- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- TfL confirmed via email on 4th November 2021 that no disruptions were recorded on the A10 due to flooding, and there were no London Underground line closures within Haringey as a result of the flooding.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- Attended flood related emergency calls at Stoneleigh Road, St Loys Road and Woodside Gardens. No details are given of the remedial works carried out.

5.2.7 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

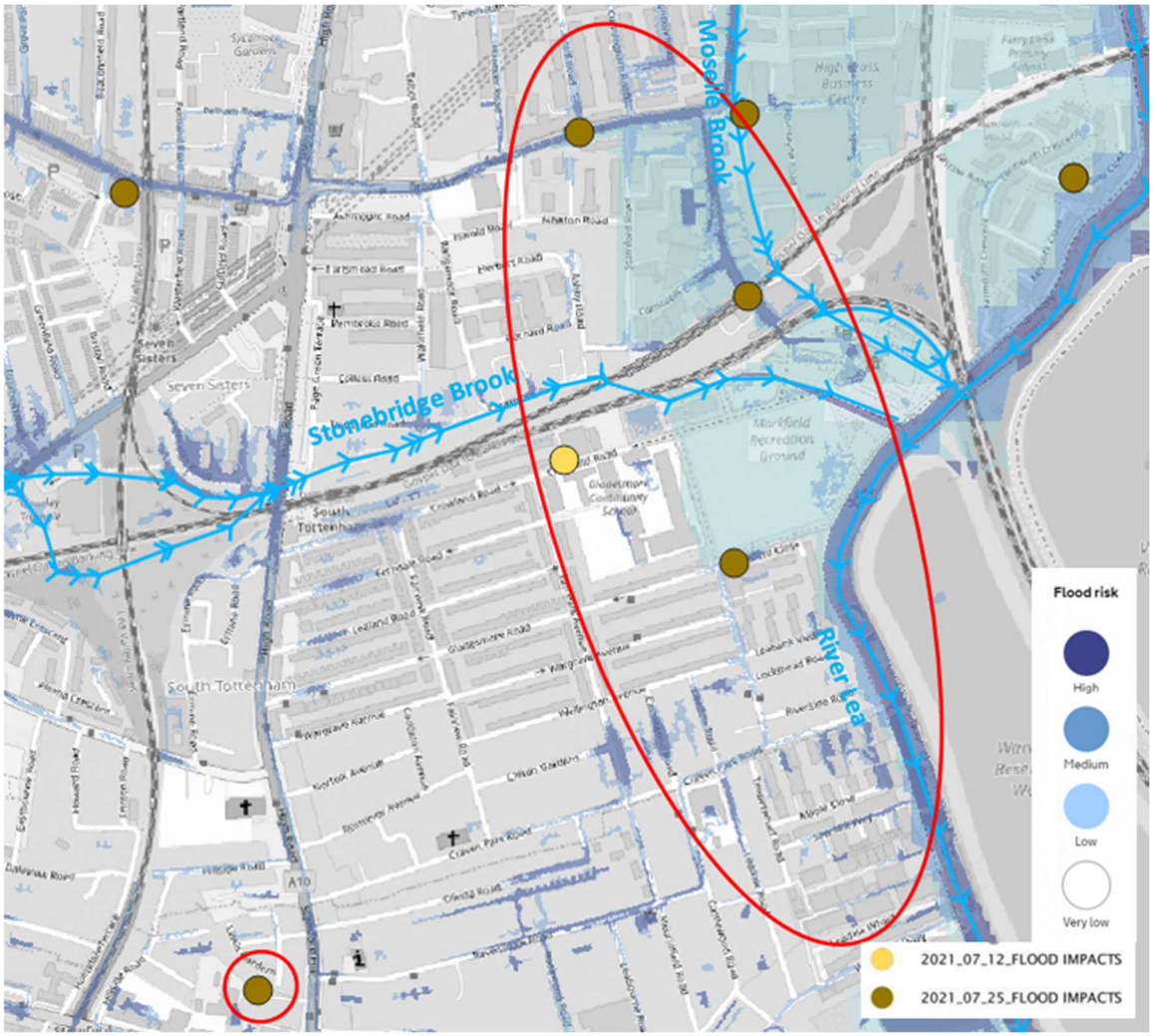
- Haringey Council to undertake increased frequency of gully pot cleaning along High Road.
- Haringey Council to consider construction of additional road gullies to increase inlet capacity, for example at the Forster Road underpass. Discussions with Thames Water would be required to confirm that there is sufficient capacity within in the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Haringey Council to consider implementation of SuDS measures in the upslope catchment to reduce the amount of runoff reaching the location of flood risk.
- Affected businesses to consider installation of demountable flood gates. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Haringey / Environment Agency to consider inspection of the Moselle Brook culverted ordinary and main watercourses respectively to ensure they are operating at capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.3 South Tottenham / Broad Lane

Figure 5-5 Site Location

Location	South Tottenham / Broad Lane

Location Plan:



5.3.1 Summary of Impact

12th July 2021

The only reported emergency call on 12th July, as shown in Figure 5-5, was from Crowlands Road Primary School. Haringey Council recorded that the cause of flooding was due to an issue with an existing pipe issue and not rainwater, therefore this location is screened out of the investigation.

River gauge data[7] indicates that flows in the River Lee at Lea Bridge rose on 25th July to 6.212mASD by 19:45PM, having ranged from 5.810mASD to 5.850mASD over the preceding two weeks.

[7] Shoothill Gauge Map, 2021, Available at https://www.gaugemap.co.uk/#!Map/Summary/1395/1545/2021-07-01/2021-08-01, [Accessed 03/12/2021]

Figure 5-6 Flooding in Broad Lane, South Tottenham, 25th July 2021

Figure 5-7 Flooding in Elm Park Avenue (L) and Lemsford Close, South Tottenham, 25th July 2021

25th July 2021

Emergency calls were made to LFB from 16:20pm citing flooding at properties in Wellington Avenue and Clifton Gardens (both intersected by Elm Park Avenue), with flooding also reported at a warehouse off Broad Lane. The photographs shown in Figure 5-6 and Figure 5-7 show flooding of footways and carriageways at the junction of Clifton Gardens and Elm Park Avenue, Lemsford Close and Broad Lane.

During a site walkover visit on 28th October 2021, users of Markfield Recreation Ground described flooding of the carriageways at Lemsford Close and Grovelands Road.

River gauge data[8] indicates that flows in the River Lee at Lea Bridge rose on 25th July to 6.094mASD by 17:45PM, having ranged from 5.800mASD to 5.820mASD over the preceding two weeks.

[8] Shoothill Gauge Map, 2021, Available at https://www.gaugemap.co.uk/#!Map/Summary/1395/1545/2021-07-01/2021-08-01, [Accessed 03/12/2021]

5.3.2 Site Context

Land falls from the west toward the topographically lowest areas in the study area at Broad Lane, Markfield Road, Markfield Recreation Ground and Grovelands Road. Streets such as Elm Park Avenue, Castlewood Road, Leadale Road and Grovelands Road run perpendicular to the fall of the land. Low points on these streets could therefore be prone to receiving and trapping surface water; this is reflected in the surface water flood risk mapping in Figure 5-2. The lowest part of St Loys Road, High Road between junctions with the A10 and Dowsett Road, Dowsett Road and Albion Road. Forster Road passes under the overground railway, forming a low spot at the underpass.

5.3.3 Existing Drainage and Watercourses

Asset records indicate stormwater sewers ranging from 229mm to 305mm diameter in residential streets around Elm Park Avenue. Stormwater is culverted within Broad Lane; the asset records indicate culvert diameters up to 660x1092mm and show a connection to the Moselle Brook Culvert on the eastern extent of Broad Lane. Sewers in Markfield Road are 229mm diameter.

The DWMP data indicates that surface water sewers on the eastern extent of Broad Lane, the northern half of Elm Park Avenue and all of Markfield Road, would surcharge during a 1 in 2 year storm. A risk of water escaping from manholes during a 1 in 30 year rainfall event is indicated at Clifton Gardens and Craven Park Road. A risk of sewer flooding during a 1 in 50 year rainfall event is indicated in streets served by Broad Lane, as well as in Elm Park Avenue and Wellington Avenue.

A section of the Lower Lee (Navigation) is located on the extern extent of the study area, flowing in a southerly direction. The Lower Lee catchment is heavily urbanised with large parts of the floodplain developed. The combination of impermeable surfaces and clayey catchment soils means the river responds rapidly to rainfall. Major flooding of the river up to 1947 led to the construction of the Lee Flood Relief Channel. Since completion there has been no major flooding of the river. Consequently, the principal flood risks are associated with the Lower Lee tributaries[9].

Two culverted tributaries of the River Lee pass through this area. The Stonebridge Brook runs adjacent to the Gospel Oak to Barking railway line in an easterly direction before crossing Markfield Recreation Ground and joining the Lee (Navigation). Asset records show the culvert to reach 2000x2400mm diameter. The Moselle Brook flows under Broad Lane and passes through industrial yards off Markfield Road before crossing Markfield Recreation Ground and joining the Lee (Navigation). Asset records show the culvert to reach 2000x3000mm diameter.

5.3.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records 3 no. instances of flooding in the South Tottenham area; on Broad Lane, Anthill Road off Broad Lane, and Tottenham Green. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N17 9 postcode area and up to 50 in the N15 4 area, as of 2010.

5.3.5 Potential Flood Mechanisms

In Broad Lane and Markfield Road, the topography, existing sewer and culvert network (and DWMP outputs) and connections to the River Lee suggests that the primary cause of flooding was excessive rainfall which exceeded the capacity of the drainage network in the area. The rise in water levels in the River Lee would have increased surcharging of the sewer and culvert network; this in combination with the intensity of the rainfall meant that it accumulated on the surface, flooding the carriageway.

In Elm Park Avenue and the neighbouring streets, the photographs and DWMP outputs strongly suggest that the primary cause of the flooding was the limited receiving capacity of the sewers. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low sections of Elm Park Avenue, Clifton Gardens, Grovelands Road and Lemsford Close.

Other contributing factors to the extent (depth and magnitude) of flooding include:

[9] Lower Lee Flood Risk Management Strategy – SEA Addendum, 2008, Environment Agency : UK

- **Blocked gullies**

  Haringey Council raised an order for gullies to be cleared on Broad Lane and Markfield Road. Any blockages would have reduced the capacity for surface water to enter reach the public sewer.

5.3.6 Responses to Flooding

Haringey Council:

- Raised an order for crew to attend Broad Lane and Markfield Road to unblock gullies. It is not stated in the flood report schedule how many gullies were cleaned.
- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this area.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- Attended flood related emergency calls at Wellington Avenue and Clifton Gardens. No details are given of the remedial works carried out.

5.3.7 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to undertake increased frequency of gully pot cleaning along Broad Lane.
- Haringey Council to consider implementation of SuDS measures in the upslope catchment to reduce the amount of runoff reaching the location of flood risk.
- Haringey Council to consider implementation of flood storage features to ease pressure on adjacent stormwater drainage and culverts adjacent the River Lee.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Environment Agency to consider inspection of the Moselle Brook and Stonebridge Brook Culverts to ensure they are operating at capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.4 St Ann's / Seven Sisters

Figure 5-8 Site Location

Location	St Ann's / Seven Sisters

Location Plan:

5.4.1 Summary of Impact

12th July 2021

No flooding is recorded by Haringey Council on 12th July for this area.

Figure 5-9 Flooding on Seven Sisters Road (L) and Black Boy Road, 25th July 2021

25th July 2021

LFB starting receiving flood related emergency calls from 17:47pm. Calls were received from properties on Seven Sisters Road, St Ann's Road, Kerswell Close, Culvert Road and Edgecot Grove. Haringey Council recorded calls from Culvert Road Seven Sisters Road / St Ann's Road, Clarence Road, Culvert Road and Edgecot Grove. Photographic footage was received of Seven Sisters Road and Black Boy Road near its

junction with Clarence Road. The footage shows the highway and part of the adjacent footways inundated with water. Vehicles are shown passing through the area. At Clarence Road, it was reported that a manhole cover had been blown and water was reported flowing from the sewer into the street.

5.4.2 Site Context

Seven Sisters Road falls to the north east from a high point at the boundary of Finsbury Park (39m AOD) to its junction with High Road (11m AOD). A low spot on Seven Sisters Road is shown along the road north of Gourley Park and adjacent to the junctions of Seven Sisters Road with Culvert Road, Victoria Crescent and Elizabeth Road (10mAOD). St Ann's Road falls from its junction with Green Lanes (20mAOD) to its junction with Seven Sisters Road (11mAOD). From the junction with Seven Sisters Road (at the railway bridge) it rises to its junction with High Road at 16mAOD. The residential areas to the north of St Ann's Road fall to the east, forming a valley which follows the approximate alignment of the Stonebridge Brook culvert and encompass the low spot on Seven Sisters Road. The surface water flood risk map reflects this topography, with higher risk areas shown through the valley alignment and in adjacent residential streets.

5.4.3 Existing Drainage and Watercourses

Asset records indicate a network of stormwater sewers in the area, ranging from 150mm diameter pipes in residential streets to 1325 x 500mm culverts on St Ann's Road. The asset plans indicate that the stormwater sewers eventually drain to the culverted Stonebridge Brook or Hermitage Brook.

The DWMP model indicates that sewers on the throughout most of St Ann's Road would surcharge during a 1 in 2 year storm, and a risk of water escaping from manholes during a 1 in 30 year rainfall event is indicated at its junctions with Green Lanes, Kimberly Gardens, St Ann's General Hospital, Latimer Road and Howard Road. The DWMP indicates that sewers on Seven Sisters Road between its junction with St Ann's Road and High Road, would surcharge during a 1 in 2 year storm, and a risk of water escaping from manholes during a 1 in 30 year rainfall event is indicated at its junctions with Culvert Road and Victoria Crescent. Other areas shown a risk of 1 in 30 year stormwater manhole escape, including Clarence Road, Ida Road and Seaford Road.

There two culverted watercourses identified in this area. The Stonebridge Brook flows under St Ann's Road from Green Lanes. The watercourse continues east along St Ann's Road to Chestnuts Recreation Ground, at which point it crosses the park in a north easterly direction, passing through the residential area north of St Ann's Road. The Stonebridge Brook crosses Seven Sisters Road, converging with the Hermitage Brook before crossing High Road. The Hermitage Brook flows south of the Gospel Oak to Barking railway line, before converging with the Stonebridge Brook. Further investigation is required as to the extent of stormwater connectivity with the brooks.

5.4.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP does not show any flooding records in the area. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N15 3 and N15 5 postcode areas, as of 2010. The SWMP cites anecdotal evidence from Haringey Council confirming that flooding has occurred at the lowest part of Culvert Road.

5.4.5 Previous flood studies

The area falls within CDA Group 4_057 ("Seven Sisters Road, South Tottenham"). The CDA analysis states that surface water follows a natural valley, with no clear outfall due to the presence of railway embankments. Surface water is observed to pond in low lying areas such as those around Culvert Road and Seven Sisters Road. Ponding in these areas is estimated in the CDA analysis to reach up to 0.5m depth throughout the natural valley.

5.4.6 Potential Flood Mechanisms

The photographs, flood reports and DWMP output strongly suggest that the primary cause of the flooding was an exceedance of the capacity of the drainage network and culverts in this area, caused by the excessive rainfall which fell on the day. The intensity of the rainfall meant that surface water was unable to enter the sewers and culverted watercourses fast enough and accumulated in the topographical low points, flooding the highways and adjacent properties. The DWMP model outputs suggest that the limited receiving capacity

of the sewers would have exacerbated the flooding. This is supported by evidence from the Haringey flood report schedule which describes a manhole cover being blown and discharging onto Clarence Road. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the public sewer, the culverts, the highway drains or a combination. Other contributing factors to the extent (depth and magnitude) of flooding include:

- **Blocked gullies**

  The flood report schedule indicates that Haringey Council cites a possible need for unblocking of gullies on Culvert Road in response to the flooding. Any blockages would have reduced the capacity for surface water to enter the public sewer.

5.4.7 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to unblock gullies on Culvert Road. It is not stated in the flood report schedule how many gullies were cleaned.
- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- The Haringey flood schedule report indicates that Thames Water were to visit the site of the blown manhole cover in Clarence Road on 27th July 2021. No further details of this visit are available.

London Fire Brigade

- Attended properties at Seven Sisters Road, St Ann's Road, Kerswell Close, Culvert Road and Edgecot Grove. No details are given of the remedial works carried out.

5.4.8 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

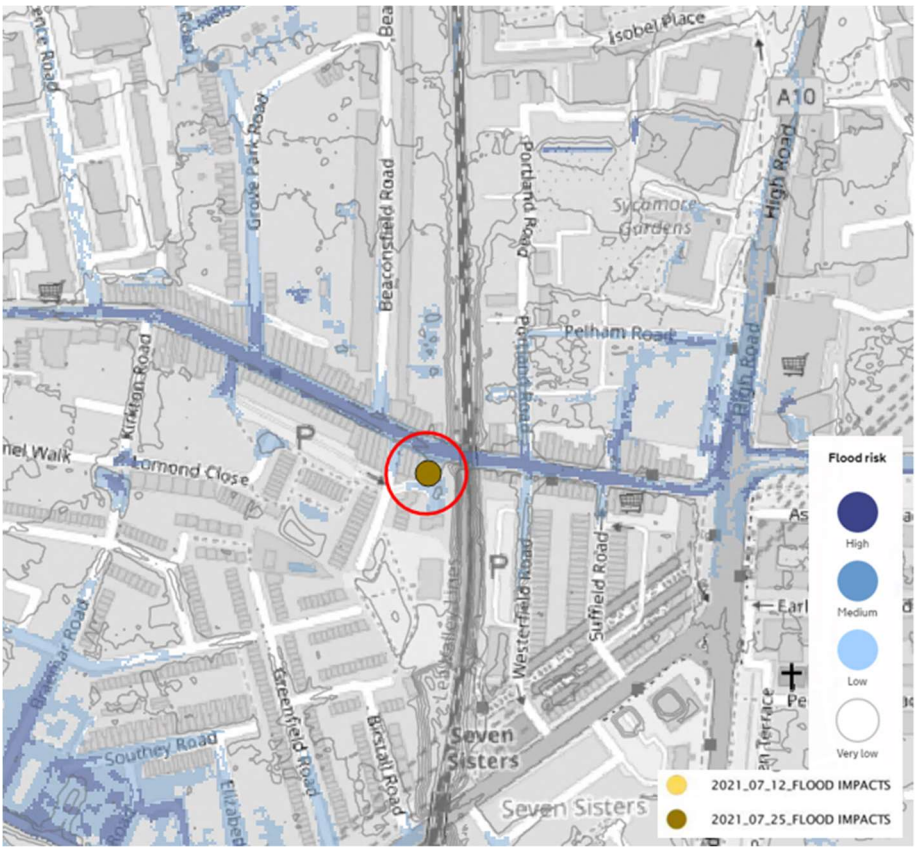
- Haringey Council to consider implementation of SuDS measures in the upslope catchments, particularly within the natural valley north of St Ann's, to reduce the amount of runoff reaching the location of flood risk.
- Affected property owners throughout the higher flood risk area (i.e. the natural valley) to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.5 West Green Road

Figure 5-10 Site Location

Location	West Green Road

Location Plan:



5.5.1 Summary of Impact

12th July 2021

No flooding was reported on 12th July at this location.

25th July 2021

Haringey Council received a flood related emergency call from a business on West Green Road citing heavy flooding on the road either side of the Chestnut to Seven Sisters railway bridge. Figure 5-11 shows the flooding east of the bridge, where water has submerged the highway and pedestrians can be seen walking on flooded footways. Flood waters appear to have reached as far as the thresholds of businesses along West Green Road. Vehicles are still passing through the road.

Figure 5-11 Flooding on West Green Road, 25th July 2021

5.5.2 Site Context

The eastern extent of West Green Road, between the junctions with Lawrence Road and High Road, is the lowest section along the road at approximately 11mAOD. West Green Road falls from circa 22mAOD at its junction with Green Lanes in the west to this point. Adjoining streets from the north and south, as well as part of High Road fall toward West Green Road. The surface water flood map indicates the risk in this area is due to the flow routes converging in this area, with limited ability for the water to flow away over the ground. During a site walkover on 28th October 2021, it was noted that there is a total of 14no. gullies along the carriageway under the bridge, over a distance of circa 12m.

5.5.3 Existing Drainage and Watercourses

Asset records indicate that this part of West Green Road is served by a series of large stormwater culverts ranging from 606mm diameter to 1524mm diameter.

The DWMP model indicates that sewers to the west of the bridge underpass would surcharge during a 1 in 2 year storm, and there would be a risk of water escaping from manholes there during a 1 in 30 year event.

There are no watercourses identified in close proximity to this location.

5.5.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records no instances of flooding on West Green Road. Appendix D, Figure 9 of the SWMP records up to 50 instances of flooding in the N15 4 postcode area, as of 2010.

5.5.5 Potential Flood Mechanisms

The photos and site evidence strongly suggest that the primary cause of the flooding was exceedance of the capacity of the surface water sewers in West Green Road. Surface water was unable to enter the sewer network fast enough and accumulated in the low-lying area along West Green Road, which reached sufficient depths to flood the highway and enter property. The DWMP model outputs suggest that the limited receiving capacity of the sewers would have been the primary cause of flooding. Observations during the site walkover support this; frequent gully positions were identified at the low spot of the railway underpass (14 no. across 12m of carriageway) but flooding was not prevented. Further investigation would be required throughout this low lying section of West Green Road to identify whether the capacity issues were entirely due to the receiving capacity of the public sewer or whether the capacity of the highway drains was a contributing factor. Other contributing factors to the extent (depth and magnitude) of flooding include:

- **Bow wave effect**

  The photographs from the flooding along West Green Road shows vehicles moving through the flood water, which in other instances across Haringey during the July floods, have caused a bow wave effect. This could have led to further movement of water onto the footway and into properties.

- **Threshold Heights**

  During the site walkover it was noted that a number of properties in the affected area had flush front door thresholds. This arrangement would allow for surface water to quickly enter properties once the footway had been submerged.

5.5.6 Responses to Flooding

Haringey Council:

- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No information of response works was provided for this location.

5.5.7 Next Steps

The EA surface water flood maps indicate that West Green Road is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to consider implementation of SuDS measures in the upslope catchment to reduce the amount of runoff reaching the location of flood risk.
- Haringey Council to consider localised temporary road closures or diversions in high-risk areas with low profile kerbs to reduce ingress of floodwaters onto footways and into properties where risk of internal flooding is caused by bow wave affect from the movement of vehicles through flood waters.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.6 Green Lanes

Figure 5-12 Site Location

Location	Green Lanes

Location Plan:

5.6.1 Summary of Impact

12th July 2021

There were no emergency calls received on 12th July 2021.

25th July 2021

LFB received flood related emergency calls from business on Green Lanes from 17:16pm. Haringey Council also received calls reporting flooding of the highway and lifted manhole covers. Figure 5-13 shows the flooding at the junction of Green Lanes and Williamson Road, where water has submerged the highway and footways. Vehicles are still passing through the road.

Figure 5-13 Flooding at Green Lanes, 25th July 2021

5.6.2 Site Context

This section of Green Lanes gently falls northwards toward the underpass of the Barking to Gospel Oak overground railway. LiDAR data indicates a low area around the junction of Green Lanes and Williamson Road, to which the adjoining Lothair Road North and Endymion Road fall at approximate gradients of 1 in 40. Further east the road rises again to the junction with Westbury Avenue, Green Lanes and High Road. The surface water flood map shows flow routes north and south of the railway underpass converging along this section of Green Lanes, with limited ability for the water to flow away over the ground.

5.6.3 Existing Drainage and Watercourses

Asset records indicate 152mm and 229mm diameter stormwater sewers north of the Green Lanes/Williamson Road junction, and a 610mm diameter sewer south of the junction.

The DWMP model does not indicate any risk of surcharging in a 2 year rainfall event south of the junction. The model indicates that sewers within the Arena Shopping Park and north of the railway underpass would surcharge during a 1 in 2 year storm, and there is a risk of water escaping from manholes during a 1 in 30 year event through Green Lanes between the railway junction and the Green Lanes / Salisbury Road junction.

The New River passes within 215m of the area. A culverted section of the Hermitage Brook is located within the Arena Shopping Park off Williamson Road, and flows eastward.

5.6.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records no instances of flooding in this section of Green Lanes. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N4 1 postcode area, as of 2010.

5.6.5 Previous flood studies

Green Lanes falls within CDA Group 4_057 (“Seven Sisters Road, South Tottenham”). The CDA analysis shows the highest surface water flood risk at the railway underpass, with ponding estimated to reach up to 0.5m depth.

5.6.6 Potential Flood Mechanisms

The photos and flood report schedule suggests that the primary cause of the flooding was exceedance of the capacity of the surface water sewers in Green Lanes. Surface water was unable to enter the sewer network fast enough and accumulated in the low-lying area along West Green Road, which reached sufficient depths to flood the highway and businesses. The DWMP model output shows a risk of surface water escaping from manholes during a 1 in 30 year event. This is supported by the flood report of manholes being lifted. Further investigation would be required in throughout the section of Green Lanes south of the underpass to identify whether the capacity issues were entirely due to the receiving capacity of the public sewer or whether the capacity of the highways was a contributing factor.

5.6.7 Responses to Flooding

Haringey Council:

- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- Attended 2 businesses on 25th July 2021. No details are given of the remedial works carried out.

5.6.8 Next Steps

The EA surface water flood maps indicate this section of Green Lanes is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

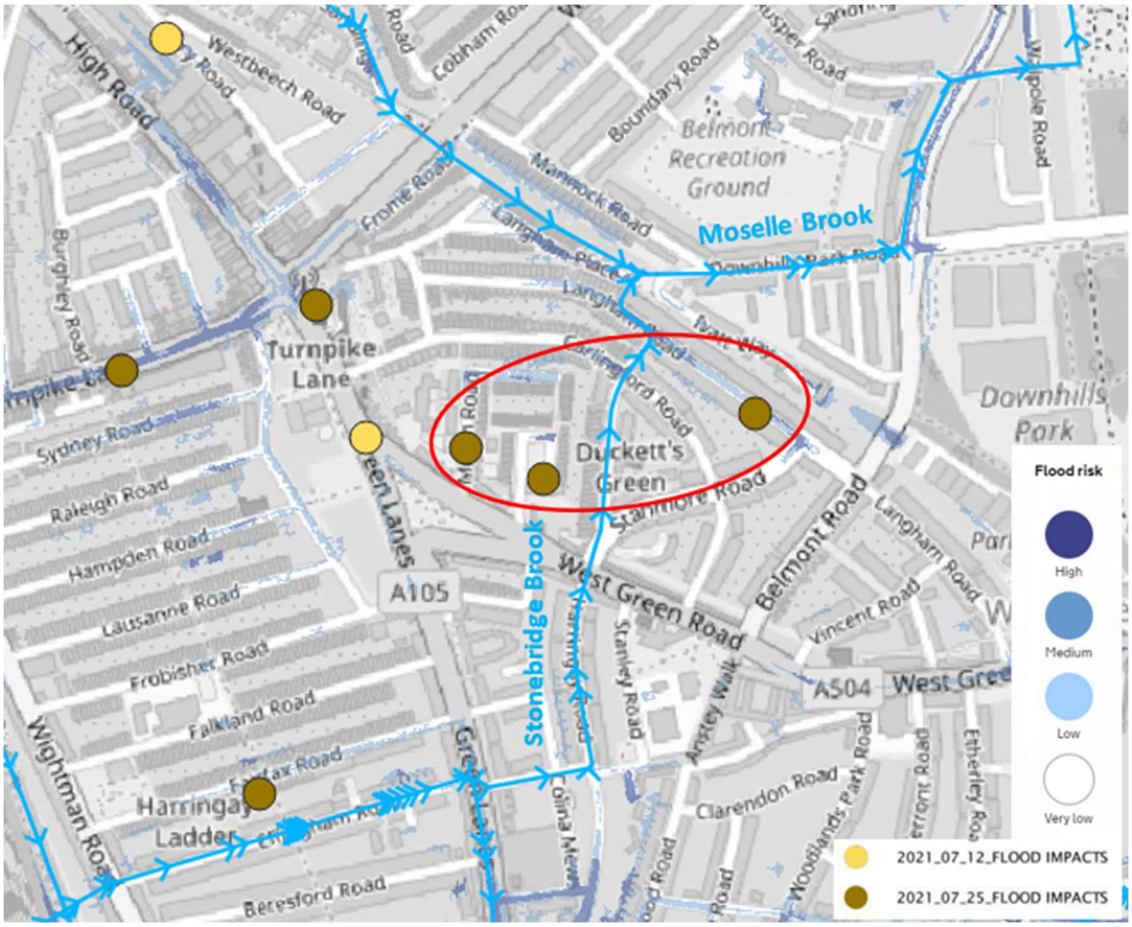
- Haringey Council to undertake increased frequency of gully pot cleaning along Green Lanes.
- Haringey Council to consider construction of additional road gullies to increase inlet capacity. Discussions with Thames Water would be required to confirm that there is sufficient capacity within in the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Haringey Council to consider construction of below ground storage structures to reduce pressure on the existing sewer system. Discussions with Thames Water would be required to identify highest risk parts of the sewer network and suitable locations for connections.
- Haringey Council to consider implementation of SuDS measures in the upslope catchment to reduce the amount of runoff reaching the location of flood risk.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.7 Milton Road Estate

Figure 5-14 Site Location

Location	Milton Road Estate

Location Plan:



5.7.1 Summary of Impact

12th July 2021

There were no emergency calls received on 12th July 2021.

25th July 2021

Haringey Council recorded three incidents of flooding in this area on 25th July; two within Milton Road Estate and one in neighbouring Langham Road. A photo of the flooding is presented in Figure 5-15 and shows carriageways and parking areas within Milton Road Estate submerged in flood water. Haringey Council attended Milton Road Estate on the evening of the flooding; residents described how the rain was too fast for the drains.

Figure 5-15 Flooding on Milton Road Estate, 25th July 2021

5.7.2 Site Context

Milton Road Estate is accessed directly from West Green Road, and Langham Road is accessed from West Green Road via Waldeck Road; the land falls from West Green Road into the Milton Road Estate and Langham Road, where areas of flood risk are observed on the surface water flood maps, indicating low spots along the northern sections of Milton Road, Willow Walk and Langham Road.

5.7.3 Existing Drainage and Watercourses

Asset records indicate that Milton Road Estate and Langham Road is served by 229mm diameter pipes throughout. The sewers appear to drain to the Stonebridge Improvement culvert, which flows under Waldeck Road northward. The asset records indicate the culvert to be 1680mm diameter.

The DWMP model indicates that sewers throughout Milton Road Estate and Langham Road would surcharge during a 1 in 2 year storm, and a risk of water escaping from manholes during a 1 in 30 year rainfall event is indicated at the junction of Langham Road and Waldeck Road.

5.7.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records no instances of flooding in the area. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N15 3 postcode area, as of 2010.

5.7.5 Potential Flood Mechanisms

The photos, anecdotal evidence and output from the DWMP strongly suggest that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low points, which flooded highways and properties. Further investigation would be required in the east of Langham Road to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer or both.

5.7.6 Responses to Flooding

Haringey Council:

- Attended the area to check gullies within Milton Road Estate, all of which were found to be clear. This included newly installed drains.
- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year.

The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No information of response works was provided for this location.

5.7.7 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

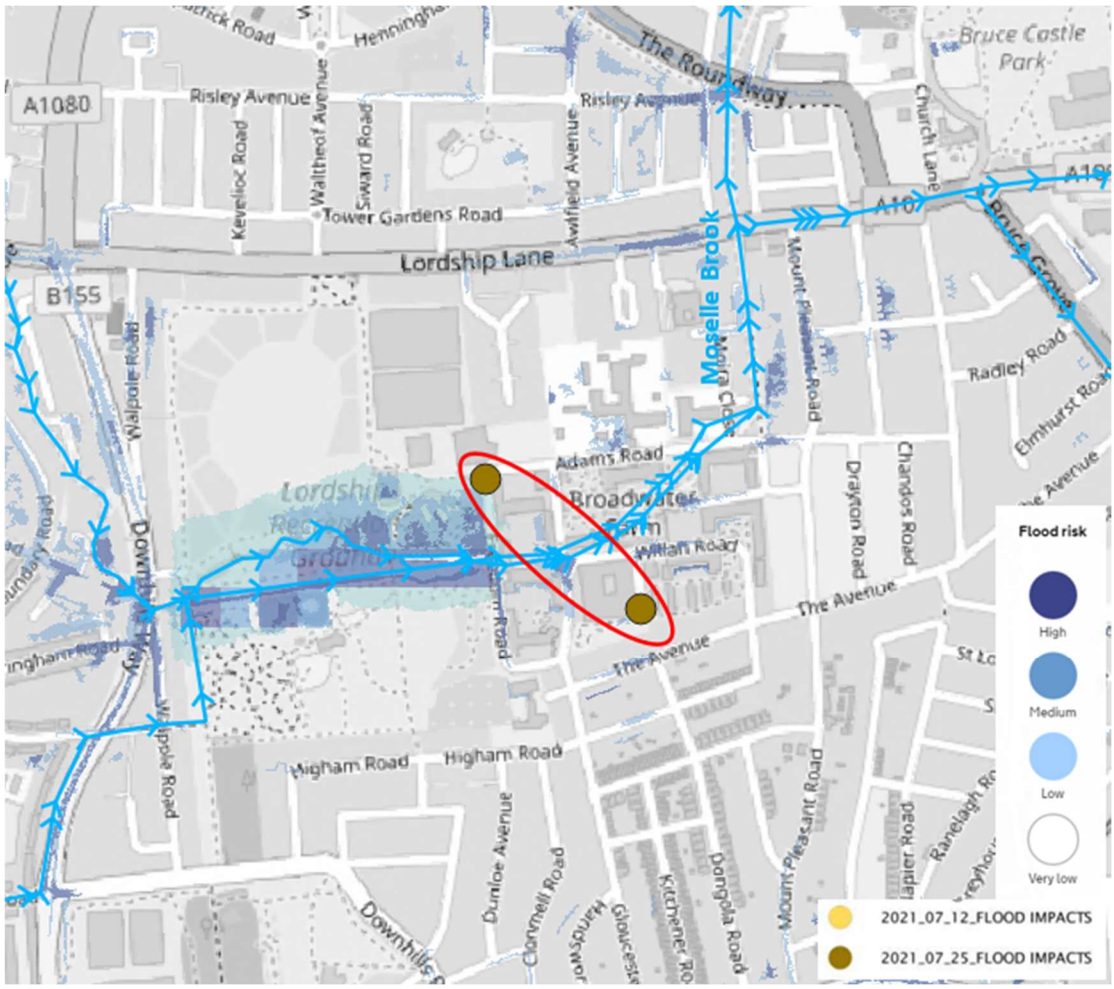
- Haringey Council to consider implementation of SuDS measures within the estate to reduce the amount of runoff reaching the location of flood risk.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.8 Broadwater Farm

Figure 5-16 Site Location

Location	Broadwater Farm

Location Plan:



5.8.1 Summary of Impact

12th July 2021

There were no emergency calls received on 12th July 2021.

25th July 2021

Haringey Council recorded flooding at Broadwater Farm Community Centre and Willan Road. Flooding of the highway and parking areas was observed at the community centre, and flooding reported in houses along Willan Road. No further details are giving of the extent of flooding in the houses.

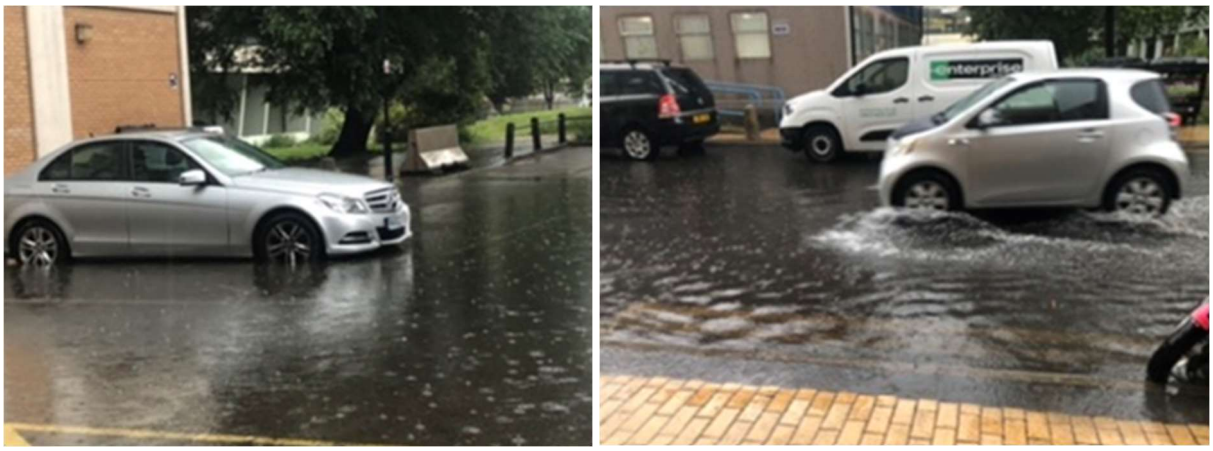


Figure 5-17 Flooding at Broadwater Farm, 25th July 2021

5.8.2 Site Context

Broadwater Farm is situated within a natural valley, with the higher land situated to the north west, south and south east along Lordship Lane (19mAOD) and Higham Road (23mAOD to 29mAOD). The valley extends from Lordship Recreation Ground in the west, and continues to the northeast toward Tottenham Cemetery. Surface water flood risk is indicated through the valley section of Lordship Recreation Ground.

5.8.3 Existing Drainage and Watercourses

Asset records indicate that the area is served by stormwater sewers ranging from 229mm to 305mm diameter.

The DWMP model indicates that surface water sewers on the western section of Willan Road would surcharge during a 1 in 2 year storm. No output is shown for the rest of Broadwater Farm.

The Moselle Brook passes through the area, following the alignment of the natural valley. The watercourse emerges from a culvert in the south west corner of Lordship Recreation Ground, crossing the park in an easterly direction as an open channel before entering another culvert near Freedom Road. The culverted watercourse then passes underneath Broadwater Farm and then north toward Tottenham Cemetery. A 2017 survey by the EA indicates that the culvert 1900mm x 2600mm diameter through this area. Further investigation is needed to ascertain the extent of connectivity between local stormwater sewers and the culvert.

5.8.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records no instances of flooding at Broadwater Farm. Appendix D, Figure 9 of the SWMP records no instances of flooding in the N17 6 postcode area, as of 2010.

5.8.5 Previous flood studies

The northern half of the Broadwater Farm area falls within CDA Group 4_063 (“The Roundway (A10) and Warkworth Road, Tottenham”). The CDA analysis shows scattered pockets of surface water flood risk within the area.

5.8.6 Potential Flood Mechanisms

The photos, topography and location of the watercourses suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity of the drainage network and/or culverted watercourse in this area. The intensity of the rainfall meant that surface water was unable to enter the sewers or culverts fast enough, resulting in an accumulation of water in the topographical low points, which reached sufficient depths to flood the carriageway and enter property. The DWMP model output suggests that the limited receiving capacity of the sewers on would have been the primary cause of flooding on Willan Road. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, the culvert or a combination.

5.8.7 Responses to Flooding

Haringey Council:

- Provided a schedule of all gully cleaning works that have taken place in South Tottenham between 12th July and 30th September 2021 (Seven Sisters, West Green, Tottenham Hale and Tottenham wards). A total of 434 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.
- Already proposing to implement a SuDS scheme upslope of Broadwater Farm to reduce the amount of runoff reaching the location of flood risk.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- Attended property on Willan Road on 25th July 2021 having received a call at 17:14pm. No details are given of the remedial works carried out.

5.8.8 Next Steps

The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to consider construction of additional road gullies to increase inlet capacity. Discussions with Thames Water would be required to confirm that there is sufficient capacity within in the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Environment Agency to consider inspection of the Moselle Brook Culvert to ensure it is operating at capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.9 Larkspur Close

Figure 5-18 Site Location

Location	Larkspur Close

Location Plan:

5.9.1 Summary of Impact

12th July 2021

Haringey Council received reports of flooding in the highway at Larkspur Close on 12th July. Haringey Council visited the area at 21:00pm, by which time the flooding had largely receded. It was confirmed to Haringey Council that the floodwaters reached kerb level. The rain stopped before property was flooded but residents had placed sandbags at their front doors in preparation. Responders from Haringey Council noted from their visit a build-up of vegetation at the culvert inlet of the Lesser Moselle watercourse.

Figure 5-19 Moselle Culvert at Larkspur Close, 12th July 2021

25th July 2021

There were no reports of flooding on 25th July at Larkspur Close, however Haringey Council attended the area due to the known flood risk at this location.

5.9.2 Site Context

Larkspur Close is situated in a lower topographical area (13mAOD) than the adjacent carriageways to the north (Jellicoe Road at 14mAOD) and south (The Roundway at 14mAOD). The surface water flood risk mapping shows high risk flood areas on The Roundway, Jellicoe Road, Fryat Road and Larkspur Close, suggesting flow routes potential reaching Larkspur Close from Fryatt Road. Informal flood brick and slab defence walls are present along the boundary of Larkspur Close and the Lesser Moselle watercourse.

5.9.3 Existing Drainage and Watercourses

Asset records show the culverted section of the Lesser Moselle passing under Larkspur Close. The asset records do not show any separate stormwater sewers, suggesting that surface water runoff on Larkspur Close drains directly to the culvert.

The DWMP model does not provide information on modelled capacity for the culvert in Larkspur Close, but it indicates that sewers on Jellicoe Road and The Roundway would surcharge during a 1 in 2 year storm. A risk of water escaping from manholes during a 1 in 30 year rainfall event is also indicated along both roads north and south of Larkspur Close.

5.9.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP records no instances of flooding in the area but the CDA analysis within the SWMP states that previous flooding (date not indicated) of the sheltered housing in Larkspur Close affected 30-50 properties. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N17 7 postcode area, as of 2010.

5.9.5 Previous flood studies

Larkspur Close area falls within CDA Group 4_063 ("The Roundway (A10) and Warkworth Road, Tottenham"). The CDA analysis output shows a surface water flow route along Rivolet Road and Jellicoe Road before entering the Moselle Brook. This location is at the headwaters of the Lesser Moselle and is one of the few locations where the watercourse is not culverted. Flooding has the potential to combine fluvial and surface water. Properties in this area are known to be at risk.

Previous flood studies confirm the presence of a flood protection wall located to the southern boundary of Larkspur Close. Previous studies have identified a combination of potential flood mechanisms including excess flows entering via site entrance at junction with Jellicoe Road and potential for reverse flows from Moselle Brook via existing road gully and pipes serving Larkspur Close.

5.9.6 Potential Flood Mechanisms

The site visit notes, flood report schedule and existing drainage arrangement strongly suggests that the primary cause of the flooding was exceedance of the capacity of the Lesser Moselle, caused by excessive rainfall. The intensity of the rainfall meant that capacity of the sewer network was overwhelmed and started to accumulate in the topographical low points, flooding the carriageways in Larkspur Close.

There is insufficient information to confirm whether there were any reverse flows via the road gully network.

The DWMP model outputs suggest that the limited receiving capacity of the sewers in neighbouring streets could have surcharged or flooded, allow surface water to escape and contribute to the flooding in the topographically lower Larkspur Close. Other contributing factors to the extent (depth and magnitude) of flooding include:

- **Blocked culvert inlet**

  Haringey Council visited the area on the evening of 12th July and noted heavy vegetation at the inlet of the Lesser Moselle Culvert inlet. Haringey Council has stated via email that at times of heavy rain debris from upstream reduces the capacity of the culvert inlet.

5.9.7 Responses to Flooding

Haringey Council:

- Visited Larkspur Close on 12th July, but no action was required as the water had receded. A second visit was made on 25th July to check the street due to the known flood risks, but there was no required for action on this date.
- Haringey Council is currently working on a flood alleviation scheme to help address flooding issues in the area. The scheme is currently at detailed design stage.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location.

London Fire Brigade

- No information of response works was provided for this location.

5.9.8 Next Steps

The EA surface water flood maps indicate that Larkspur Close is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to consider regular monitoring and clearance of vegetation from the Lesser Moselle culvert inlets at this location.
- Haringey Council to consider implementation of SuDS measures in the adjacent uphill streets to reduce the amount of runoff reaching the location of flood risk.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.

- It is noted that Haringey Council is progressing a flood resilience / protection scheme at Larkspur Close which will comprise installation of rain gardens within existing green spaces within the Close, installation of a flood retention basin within the green space located at the junction of Fryatt Road and Jellicoe Road, installation of a demountable flood gate at the entry to Larkspur Close and installation of non-return valves at the gully outlet points from Larkspur Close to Moselle Brook along with other ancillary works. The scheme is currently at design stage and no defined date for installation has been provided.

6 SUMMARY

The flooding that occurred on 12th July and 25th July 2021 in South Tottenham was caused by storms ranging from a 1 in 5 to a 1 in 20 year rainfall event on 12th July, and on 25th July potentially up to a 1 in 100 year rainfall event. Traditional pipe and gully urban drainage is generally not designed to cope with rainfall of the intensity experienced.

It is understood that there are no programmes for Thames Water to invest in upscaling its local drainage networks to provide additional sewer capacity.

Other factors have been identified which may have caused flooding at the respective locations identified within this report, which include;

- Blocked gully pots observed during the site visits to the respective locations.
- Propagation of flood waters by passage of vehicles through flood waters causing bow waves.
- Watercourse culvert inlet becoming overgrown with vegetation.
- Lack of capacity within surface water sewers, as noted by recorded reports of flooding (Clarence Road, Green Lanes / Williamson Road and St Annes) and outputs from DWMP models.

Thames Water were unable to provide any location specific data or actions carried out in relation to flooding for a number of the locations considered by this Section 19 assessment.

Thames Water has undertaken an internal review, (which considers the wider London catchment) to identify the actions taken ahead of, during and after the July 2021 storm events. This review concluded that the two key areas in which customers were let down were the initial response on the ground and lack of Thames Water customer contact provision during the events.

A further Independent Review has been commissioned by Thames Water into the causes and impacts of flooding, with a detailed assessment of sewer performance, which is due to be completed by Spring 2022.

It is understood that there are no current programmes for Thames Water to invest in upgrading local drainage networks to provide additional sewer capacity in the South Tottenham area.

6.1 Next steps

Haringey Council has committed to programme and undertake future gully cleaning throughout Haringey which is proposed to be completed by Summer 2022. Haringey Council has also identified that it is progressing with a scheme to manage flood risk within Larkspur Close.

Other actions are recommended and are summarised below:

- The outcomes of the Thames Water independent review (due 2022) to be shared with other RMAs to ensure that mechanisms of flood can be better understood and any actions identified from the review can be developed jointly with other RMAs (as appropriate).
- Haringey Council to consider further retrofitting of SuDS and flood alleviation measures to manage excess storm runoff along predominant flow paths.
- Localised temporary road closures or diversions are recommended in high-risk areas with low profile kerbs to reduce ingress of floodwaters onto footways and into properties where risk of internal flooding is caused by bow wave effect from the movement of vehicles through flood waters.
- Homeowners and businesses should be aware of their risk of flooding and investigate flood resilience and resistant measures to protect affected properties. Haringey Council offers advice through its website[10]. This link also provides information on how to sign up for flood warnings.

[10] Be prepared for flooding. Haringey Council, 2021, available at https://www.haringey.gov.uk/environment-and-waste/major-emergencies/drainage-and-flooding/be-prepared-flooding, accessed 12th November 2021.

- EA / Haringey to consider inspection of main and ordinary watercourses at the areas affected to ensure culverts are operating at capacity.

Section 19 Flood Investigation Report

Hornsey and Crouch End,

London Borough of Haringey

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Abbreviations used within the report

CDA	Critical Drainage Area
DWMP	Drainage and Wastewater Management Plan
FEH	Flood Estimation Handbook
FWMA	Flood and Water Management Act 2010
LLFA	Lead Local Flood Authority
mAOD	Metres Above Ordnance Datum
RMA	Risk Management Authority
SFRA	Strategic Flood Risk Assessment
SWMP	Surface Water Management Plan
TW	Thames Water
GMTRA	Glasslyn, Montenotte and Tivoli Residents Association

CONTENTS

1 INTRODUCTION

1.1 Terms of Reference

McCloy Consulting have been instructed on behalf of Haringey Council to undertake an investigation into flooding, in accordance with Section 19 of the Flood and Water Management Act, 2010.

1.2 Legislative background

Where a significant flood event has occurred and the responsibility for managing the future risk is unclear, Haringey Council may conduct a formal flood investigation, under Section 19 of the Flood and Water Management Act, 2010. The aim of this investigation is to identify which authority has responsibilities and whether they are proposing to respond. The results of the investigation will be published.

As the Lead Local Flood Authority (LLFA) for the study area, Haringey Council has a duty to investigate flood incidents as set out in Section 19 of the Flood and Water Management Act, 2010 (the Act). The Act states:

(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.

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:

a. Heavy rainfall

b. A river overflowing or its banks being breached

c. A dam overflowing or being breached

d. Tidal waters

e. Groundwater, or

f. Anything else (including any combination of factors).

But "flood" does not include

g. flood from any part of a sewerage system, unless caused by an increase in the volume of rainwater, entering or affecting the system, or

h. a flood caused by a burst water main

1.3 Defining the study extents

Two flood events were experienced in July 2021.

- 31 reports of flooding to Haringey Council recorded following rainfall events on 12th July 2021.
- 47 reports of flooding to Haringey Council recorded following rainfall events on 25th July 2021.

Widespread flooding was experienced across Haringey for both events. Haringey Council has proposed that reported flood incidents be split into three geographic areas of Wood Green, Hornsey Crouch End and South Tottenham. These areas describe the main concentrations of flood reports across the catchment taking into account both dates. This report covers the **Hornsey and Crouch End** geographic areas.

2 STUDY AREA

2.1 Study Location and Context

Hornsey and Crouch End are suburban districts in the borough of Haringey in London, England. The districts cover parts the N6, N8 and N10 postal areas.

Figure 2-1 below shows the extent of the study area. Bounding areas of Muswell Hill and Hornsey Vale/Stroud Green are included in this report for the purposes of the investigation.

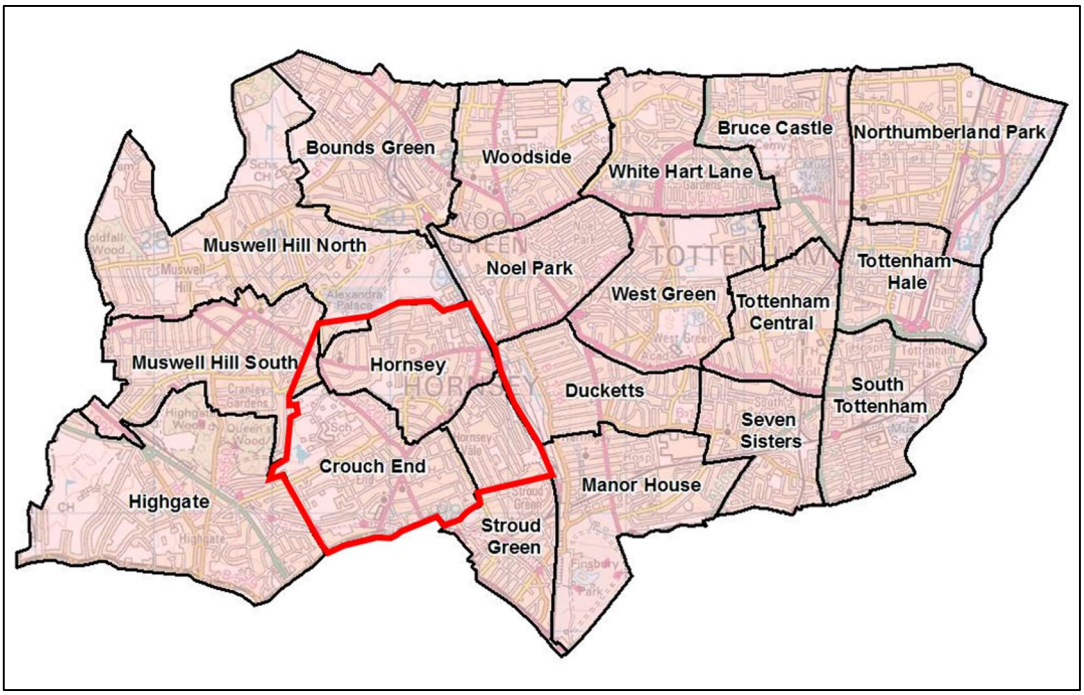


Figure 2-1 Map of Haringey showing study area extents

Hornsey and Crouch End lie approximately six miles north of central London. The districts are largely residential, with commercial and retail centred along High Street, Park Road and The Broadway.

The districts are served by a road network which includes the A103, A504, A1201 and A1080. Hornsey railway station lies on the eastern boundary of the Hornsey district. The station is on the Great Northern Route that forms part of the East Coast Main Line.

2.2 Topography

The topography of the study area is characterised by four primary high points: along Muswell Hill at the bound of Alexandra Palace Gardens to the north west (90m above ordnance datum (AOD)); at Hillfield Avenue in the east (50mAOD); along Shepherds Hill in the south west (80-100mAOD); and along Ridge Road in the south east (65mAOD). Lower land between these high points generally falls to the east.

Figure 2-2 Topography of Hornsey and Crouch End within London Borough of Haringey

2.3 Geology and Soils

Historic borehole logs within the study area were reviewed using British Geological Survey (BGS) database.

Borehole Grid References TQ38NW4, TQ38NW293 and TQ38NW167/B identified similar ground conditions generally described as follows;

Made Ground (silty clay with fragments of brick, concrete, rootlets and ash) was encountered to up to 1.0m below ground level (bgl), with London Clay (stiff brown silty clay) encountered beyond that to over 40m bgl.

2.4 Watercourses

Hornsey and Crouch End lie within the Thames Catchment, and in particular drain to the Lower Lee.

Haringey's Strategic Flood Risk Assessment (SFRA)[1] details how a number of watercourses within the borough are culverted and commonly described as 'lost'.

The currently known alignment of watercourses local to Hornsey and Crouch End is shown in Figure 2-3. Note that the New River is a controlled waterway with Thames Water having responsibility under the FWMA.

[1] Strategic Flood Risk Assessment, 2015, Haringey Council: UK. Available at: http://www.haringey.gov.uk/sites/haringeygovuk/files/2012s6315_haringeycouncil_sfra_v4.0_0.pdf Accessed on 24/08/2017.

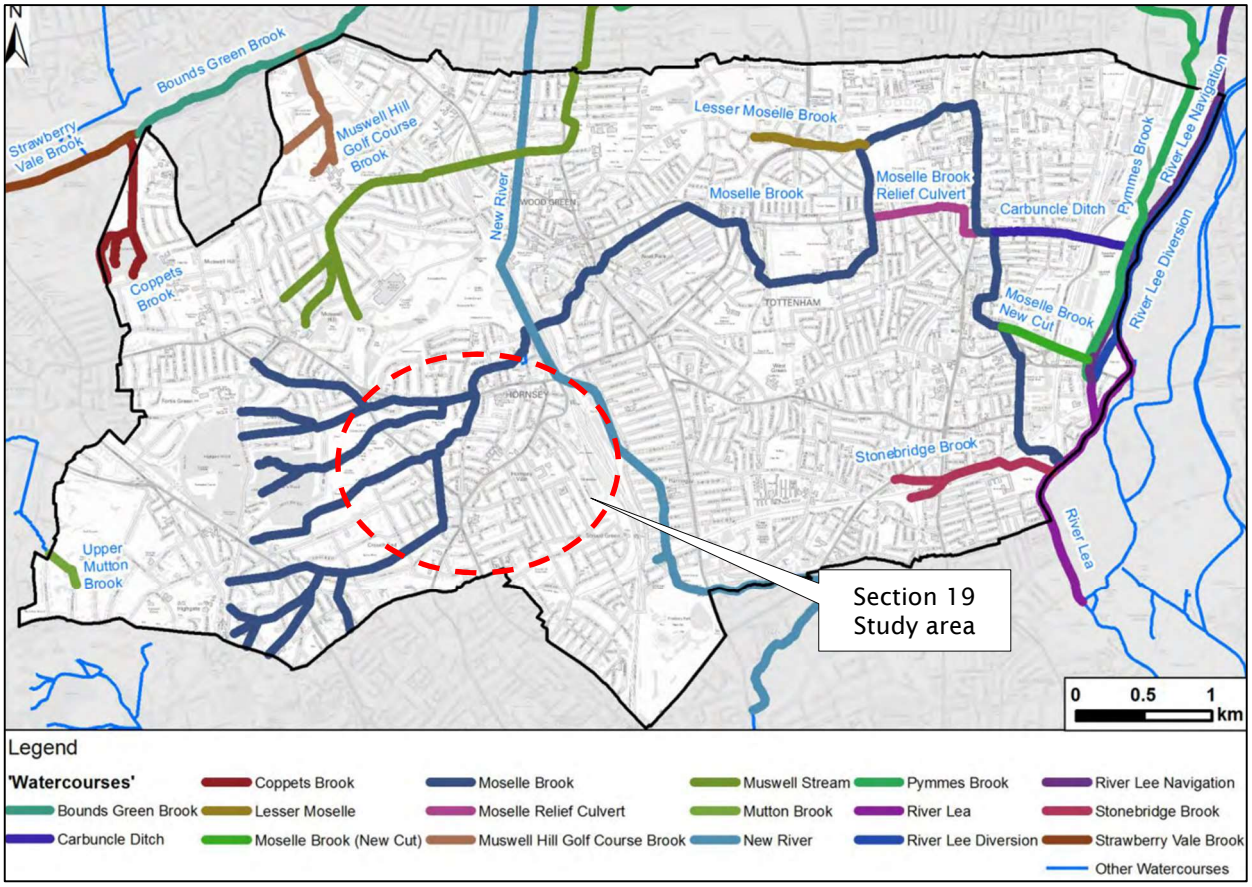


Figure 2-3 Overview of watercourses in Haringey and surrounding areas (from Haringey SFRA)

The following table indicates who is responsible for watercourses in Haringey;

Table 2-1 Watercourse responsibility in the London Borough of Haringey[2]

Watercourse	Classification	Responsibility under the FWMA
Moselle Brook	Main River	Environment Agency
Stonebridge Brook	Main River	
Pymmes Brook	Main River	
River Lee/River Lee Navigation	Main River	
Unnamed ditches	Ordinary Watercourse	Haringey Council
New River	Artificial Watercourse	Thames Water

[2] Surface Water Management Plan (SWMP), 2011, Haringey Council: UK. Available at: https://www.haringey.gov.uk/sites/haringeygovuk/files/dlt2_gp4_haringey_swmp_draft_v2.0_0.pdf Accessed on 02/11/21

2.5 Sewerage

The majority of Hornsey and Crouch End is urban development of residential and commercial properties. The area therefore has a high percentage of impermeable area due to buildings, car parks, hard standings and highways.

The sewer network is separate, with a percentage of storm runoff known to contribute to the foul system. The public sewers are owned and maintained by Thames Water.

For the purposes of the Section 19 investigation, Thames Water has provided access to the Practitioner Portal of the Drainage and Wastewater Plan (DWMP). The DWMP portal provides modelling outputs from Thames Water's Capacity Assessment Framework, which includes identifying areas where sewers would be at capacity during a 2 year storm, where potential escapes from manholes would occur during a 30 year storm and the risk of flooding during a 50 year storm. This information has been used to further analyse the possible flood mechanisms across the study area.

2.6 Highway Drainage

The public highway generally drains to the public sewer network in this area via road gullies and pipework owned and maintained by Haringey Council as the local highway authority.

2.7 Flood Risk Mapping

The Environment Agency (EA) online maps provide readily available flood risk data within the study area. No new flood risk mapping has been produced to support this assessment.

2.7.1 Risk of Flooding from Rivers and Sea

The entire study area is within Flood Zone 1 whereby the annual risk of flooding, from either rivers or the sea, is less than 0.1%.

2.7.2 Risk of Flooding from Surface Water

The surface water Long-Term Flood Risk Map is shown in Figure 2-4. There are areas of high-risk flooding on main vehicular routes throughout the borough, notably along the A504 Priory Road and Park Road. Further areas of flood risk are shown in the Priory Park area and along Weston Avenue, as well as the sports fields adjacent Highgate Wood Secondary School.

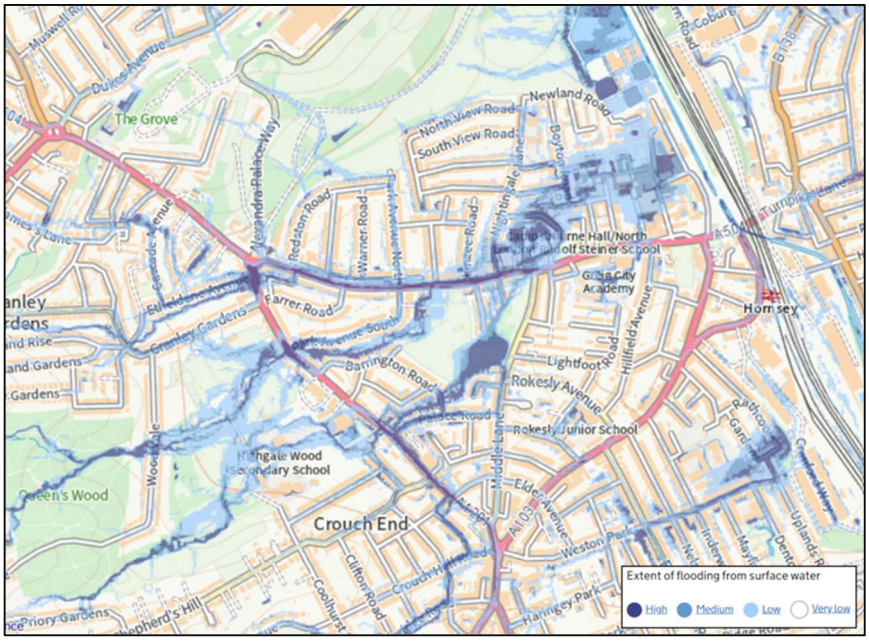


Figure 2-4 Surface Water Long Term Flood Risk Map

3 RISK MANAGEMENT AUTHORITIES

3.1 Haringey Council

Haringey Council is the LLFA for the area and the highway authority. The Flood and Water Management Act 2010 gives LLFAs powers and duties for the strategic overview of local flooding and for some flood risk management functions including:

- A duty to investigate flooding;
- A duty to maintain a register of significant structures and features;
- Powers to regulate ordinary watercourses;
- A duty as a statutory consultee to review drainage strategies and surface water management provisions associated with applications for major development.

As the highway authority, Haringey Council is responsible for the maintenance and operation of drainage gullies and the pipework connecting these to the public sewers for the proper function of highways and safety of highway users.

Haringey Council has contracted Marlborough Highways to support it on all aspects of highway infrastructure including carriageway, footway and cycleway maintenance, junction improvements, traffic calming measures, gully, drainage works and sustainable drainage systems (SuDS). The five year contract began in 2020.

3.2 Environment Agency

The EA is responsible for taking a strategic overview of the management of all sources of flooding and coastal erosion. The EA also has responsibility for managing the risk of flooding from main rivers, reservoirs and estuaries.

3.3 Statutory Undertaker for Public Sewers

Thames Water has a duty as a sewerage undertaker under Section 94 of the Water Industry Act 1991, to provide and maintain sewers for the drainage of buildings and associated paved areas within property boundaries. It has responsibility for any flooding which is directly caused by its assets i.e. its water or sewerage pipes. It also has a duty to cooperate with other relevant authorities in the exercise of flood risk management functions, which may include the sharing of information with other relevant authorities.

3.4 Transport for London

Transport for London (TfL) is responsible for the primary roads, underground, rail networks (London Overground and TfL Rail), buses, taxis, trams and river services in London. In Haringey, the primary roads, or 'Red Routes' which TfL is responsible for include the A406, the A10 and parts of Archway Road and Seven Sisters Road.

3.5 Riparian Landowners

Private landowners have responsibilities for the maintenance and upkeep of ordinary watercourses, including any associated culverts, and the bed / banks of any watercourse adjacent to or within their land. They should clear away any debris from the watercourse or culvert even if it did not originate from their land.

3.6 Residents and Property Owners

Private landowners are responsible for the maintenance and operation of drainage assets and connecting pipework located on privately owned roads and footways, car parks and other hard standings and for building surface water drainage.

Residents and property owners who know they are at risk of flooding have responsibilities to mitigate the risk of flood damage to their property as far as is reasonably practicable[3]. They should take measures to protect themselves and their property when flooding is imminent. Residents and property owners have the right to defend their property as long as they do not subsequently increase the risk of flooding to other properties.

Business owners should make a flood plan for their business. There are measures that can be taken to reduce the amount of damage to business premises caused by flooding and properties at risk should be insured.

[3] Living on the Edge. Environment Agency, 2015, available at https://www.wlma.org.uk/uploads/EA_Guide_to_rights_and_responsibilities_of_riverside_ownership.pdfhttps://www.wlma.org.uk/uploads/EA_Guide_to_rights_and_responsibilities_of_riverside_ownership.pdf, accessed 15th November 2021

4 SUMMARY OF RAINFALL EVENTS

4.1 12th July 2021

At 10:04 on 11th July 2021 (and updated 08:54 on 12th July 2021), the Met Office issued a Yellow warning of Rain expected between 10:00 and 23:59 on 12th July 2021. The warning covered the East of England, London, South East England and South West England.

Rainfall data was obtained from the EA for review from gauges located in Hornsey (grid reference TQ30557 89795), Brent, (grid reference TQ20836 87013) and Wanstead (grid reference TQ 41544 88234).

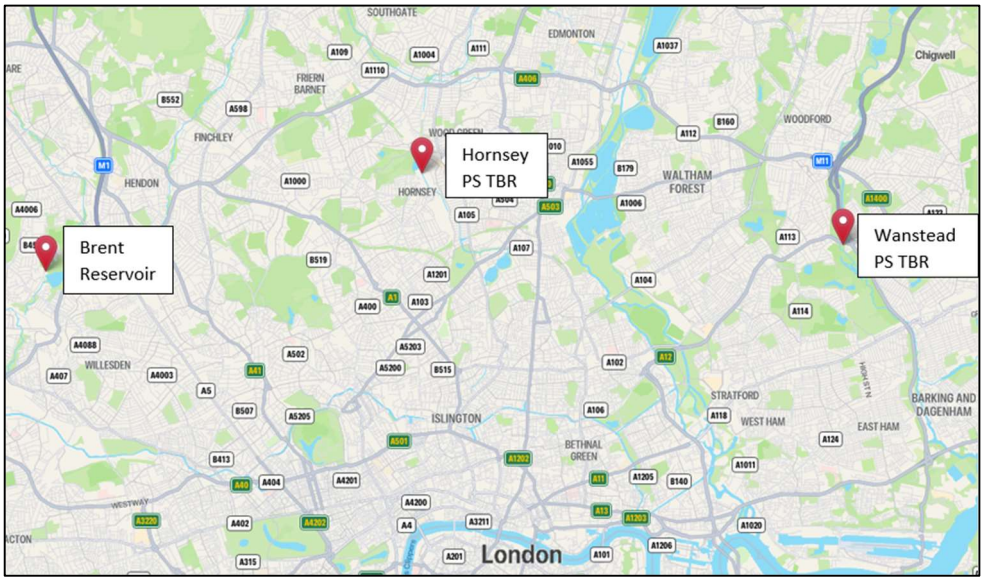


Figure 4-1 Locations of rainfall gauges

The most significant rain was recorded at Brent Reservoir between 17:00pm and 19:00pm, which recorded 7.6 mm of rainfall within this period. This rainfall is estimated as 1 in <2 year return event based on comparison of data obtained from the Flood Estimation Handbook. A total of 11.6mm was recorded for the whole day, with 10.2 mm of this falling over 3.5 hours. The rain gauge at Wanstead recorded 8mm over 24 hours, and the gauge and check gauge at Hornsey gave unreliable readings on the day due to apparatus blockages.

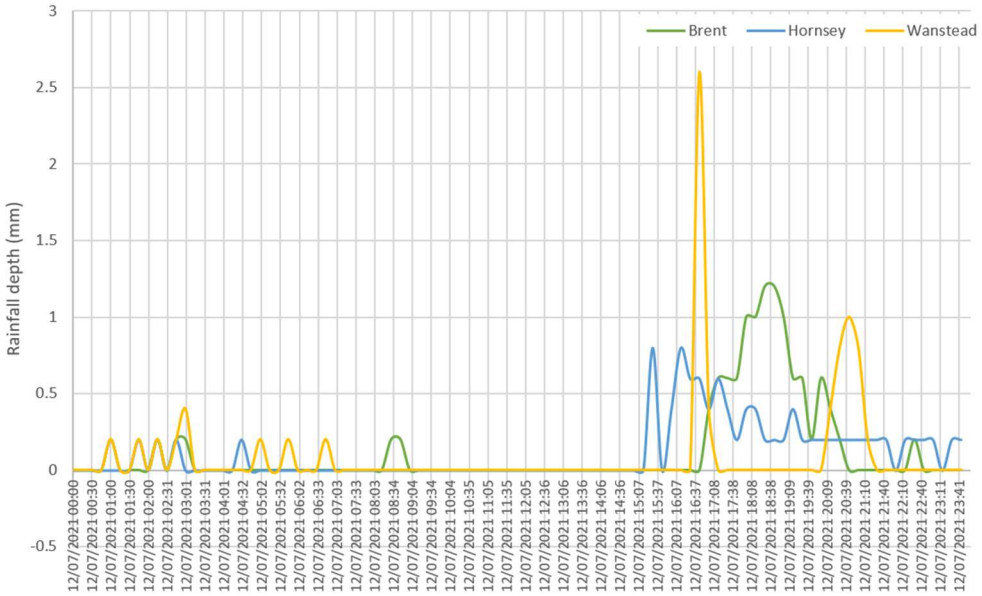


Figure 4-2 Rain gauge data, 12th July 2021

The relatively low rainfall recorded above is not consistent with the flood reports and anecdotal evidence provided from the area. The Hornsey gauges were blocked on retrieval of data and the recordings conflict with the Thames Water analysis of the event, which was presented at a recent workshop related to the floods[4], and indicated that the district received rainfall return periods ranging from a <30 year to a <50 year event. The areas in which the gauges are located in Brent (Borough) and Wanstead (London Borough of Redbridge) did not experience the same intensity of rainfall experienced elsewhere, which concurs with the relatively low estimated rainfall return period derived from the rain gauge data for these locations.

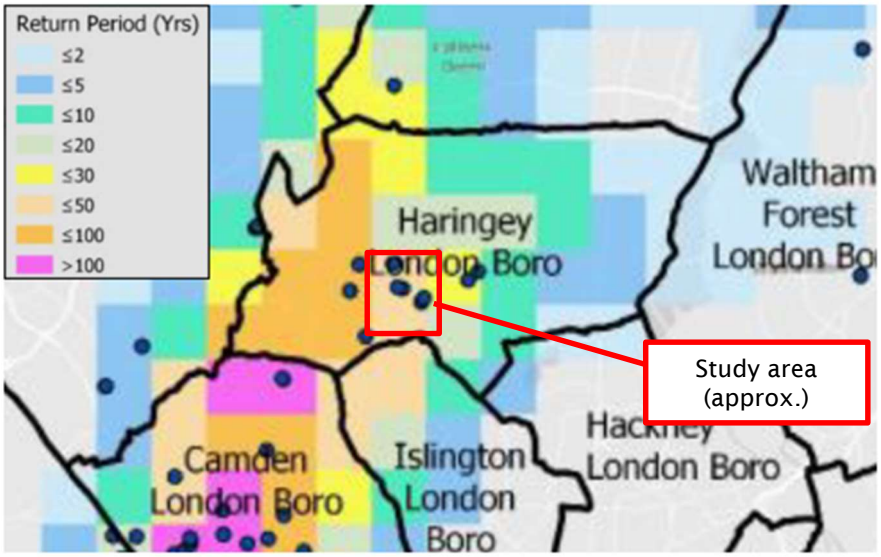


Figure 4-3 Rainfall Return Period and Report Flooding Incidents, 12th July 2021 (RaRa data using FEH99).

4.2 25th July 2021

The Met Office issued an Amber warning of Thunderstorm at 14:33 on 25 July 2021, expected between 14:33 and 19:00 on 25th July 2021, covering East of England, London and South East England.

The most significant rain being recorded at the selected gauges was between 14:15 and 15:45 at Wanstead. The rain gauge recorded 49 mm of rain within this time period, which was estimated to be a 1 in 70 year rainfall return event. A total of 54 mm was recorded for the whole day. The rain gauges at Brent Reservoir and Wanstead recorded 7.6mm and 22.8mm, respectively on this date.

[4] Supporting Section 19 Investigations, Workshop, 28th September 2021. Thames Water: UK

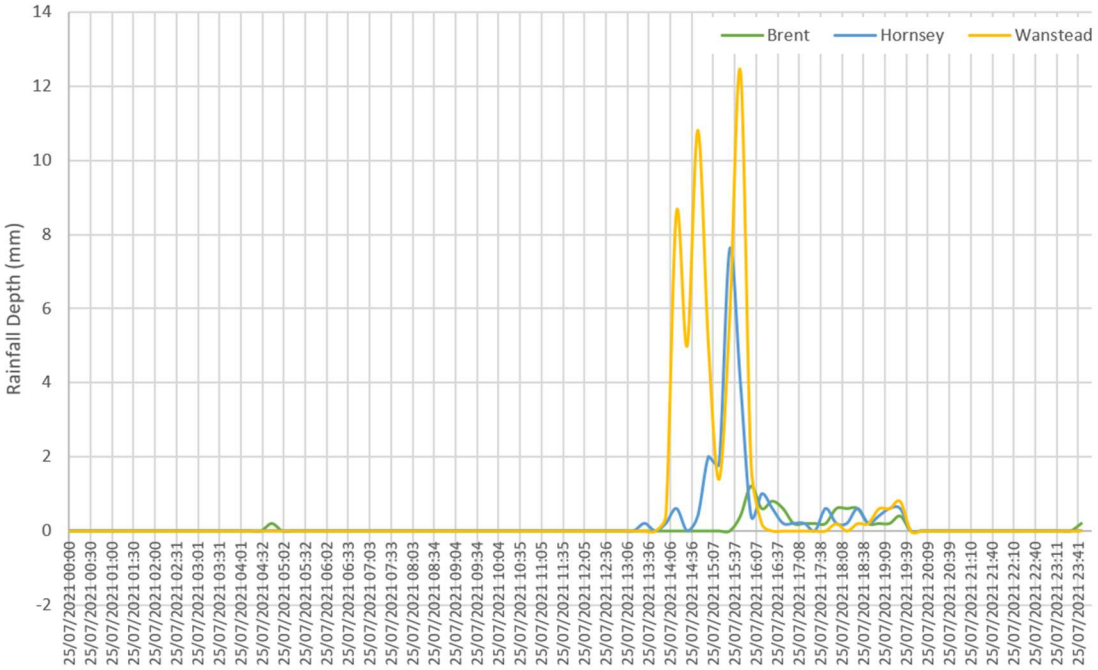


Figure 4-4 Rain gauge data, 25th July 2021

The Thames Water workshop presented and indicated that the district received rainfall return periods ranging from a <20 year to a <30 year event.

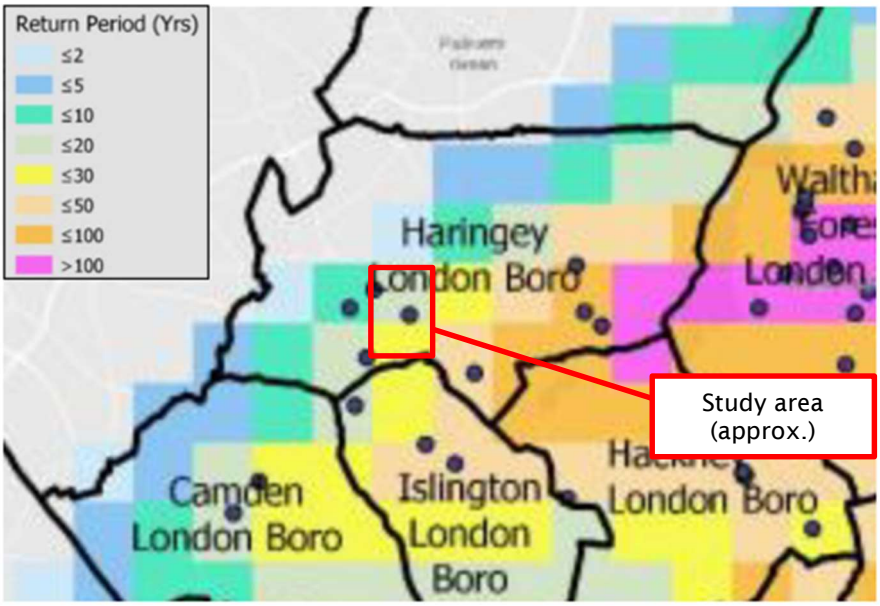


Figure 4-5 Rainfall Return Period and Report Flooding Incidents, 12th July 2021 (RARA data using FEH99).

5 ANALYSIS OF THE FLOOD EVENTS

5.1 Records of Incidents

Table 5-1 summarises the reports of flooding received by Haringey Council, and reactionary works that were undertaken by Haringey Council.

It is noted that the following have been screened out of further investigation;

- flood reports from single properties (not in proximity to other properties)
- locations where it is clear from the report that flooding was caused by internal drainage failure (for example a leaking roof).

Flood reports that have been screened out have been denoted by * beside the location name in the following table.

To support this investigation, Haringey Council has been provided with flood reports collated by London Fire Brigade (LFB) and Thames Water.

LFB received a total of 99 calls on 12th July 2021 and 58 calls on 25th July 2021 across the borough. Thames Water received 17 calls on 12th July 2021 and 13 calls on 25th July 2021 across the borough. LFB and Thames Water responses to individual flood locations are noted in the location specific sections of this report.

Table 5-1 Schedule of report flood incidents in Hornsey and Crouch End

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area
Priory Road/High Street area				
Outside 24 Boyton Road	12/07/2021	Flooding in highway	Visit made, no further actions required	Group4_055
Priory Park (rain gardens, entrance of bowling club and school)	12/07/2021	Flooding, manhole cover lifted, one resident fell in.	Actioned to replace cover to manhole.	
24/30 Rectory Gardens	12/07/2021	Major flooding in highway, water entered properties, damage to vehicles	No action taken as water had receded by time of visit.	
Mary's Church of England Primary School, Rectory Gardens	12/07/2021	No details recorded	School closure	
Priory Road jct Park Avenue South	25/07/2021	Minor flooding in junction	None recorded	

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area
Colorado Apartments	12/07/2021	Drains backing up into properties. Ankle deep flooding. Electrics tripped.	Residents placed in temporary accommodation	
Park Road (north)				
Park Road jct Park Avenue South	12/07/2021	Major flooding, blocked gullies	Marlborough attended to clear gullies. Road closure put in place.	Group4_055
Priory Road/Muswell Hill jct	12/07/2021	Flooding in highway	None recorded	
Park Road jct Cranley Gardens	12/07/2021	Lifted paving slabs, loud sewer noises	Marlborough attended and made safe.	
Park Road jct Etheldene Avenue	12/07/2021	Flooding in highway, lifted paving slabs.	Marlborough attended and made safe. Permanent fix required.	
	25/07/2021	Blocked drains	Cleared gullies	
308-310 Park Road	25/07/2021	Flooding to business	None recorded	
Park Road (south)				
Park Road jct Wolseley Road (Gransden House)	25/07/2021	Minor flooding	None recorded	Group4_055
Tivoli Road / View Crescent	25/07/2021	Minor flooding	None recorded	
Palace Road	25/07/2021	Flooded basement	None recorded	

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area
10 Middle Lane	25/07/2021	Flooded business	None recorded	
Maynard Arms, Park Road	25/07/2021	Cellar and beer garden flooded	None recorded	
Weston Park area				
Rathcoole Gardens	25/07/2021	Minor flooding	Clear gullies	Group4_056
Inderwick Road	25/07/2021	Flooded basement	None recorded	
98 Weston Park	25/07/2021	Flooded business	None recorded	
Other Locations				
Wood Vale	12/07/2021	Flooding of highway and numerous properties along road	None recorded	Group4_055
Fortismere School*	12/07/2021	Flooding of north wing hall and first floor	Year 10 students sent home. London Fire Brigade pumped water out of north wing.	Not applicable
Hillside Gardens	12/07/2021	Flooding in the highway, potential basements affected	Marlborough attended to make safe and supply sandbags.	Group4_055
Highgate Hill*	12/07/2021	Carriageway lifted, possible sink hole	Marlborough called and made safe	Not applicable
Rosebery Road by Parham Way*	12/07/2021	Flooding in highway	Inspection undertaken and no actions taken.	Not applicable

Location	Date of Report	Details of Flooding	Response to Flooding	Critical Drainage Area
Highgate Library*	13/07/2021	Roof leaking	None recorded	Not applicable
Edge of Muswell Hill Playing Fields*	12/07/2021	Flooding in highway and parks	None recorded	Not applicable
Campsbourne School*	13/07/2021	Leaking roof	Repairs to be undertaken by others	Not applicable
Stapleton Hall Road	25/07/2021	Flooding in a number of properties	Clear gullies	None

Figure 5-1 presents an overlay of flood reports from Haringey Council's Reported Flooding Impacts Mapping and highlights the areas of interest where an increased number of flood incidents were reported. Note that screened out locations also appear in this figure.

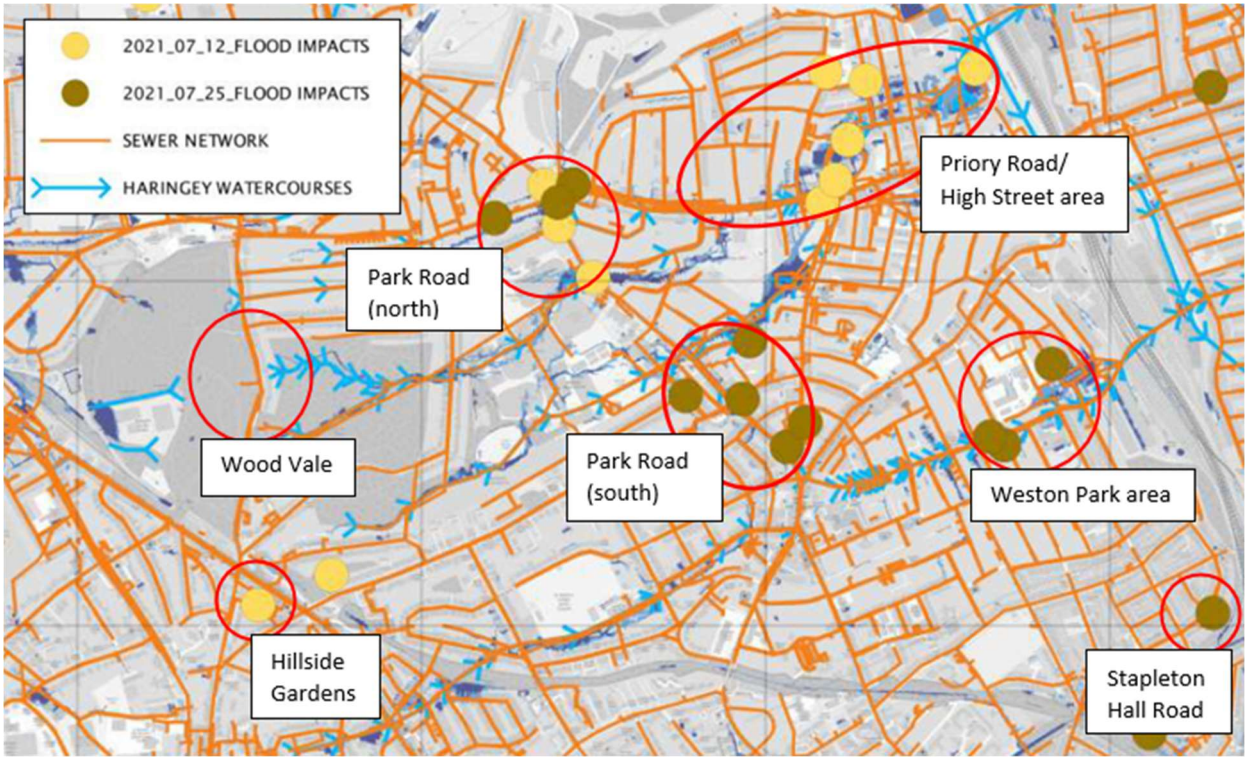


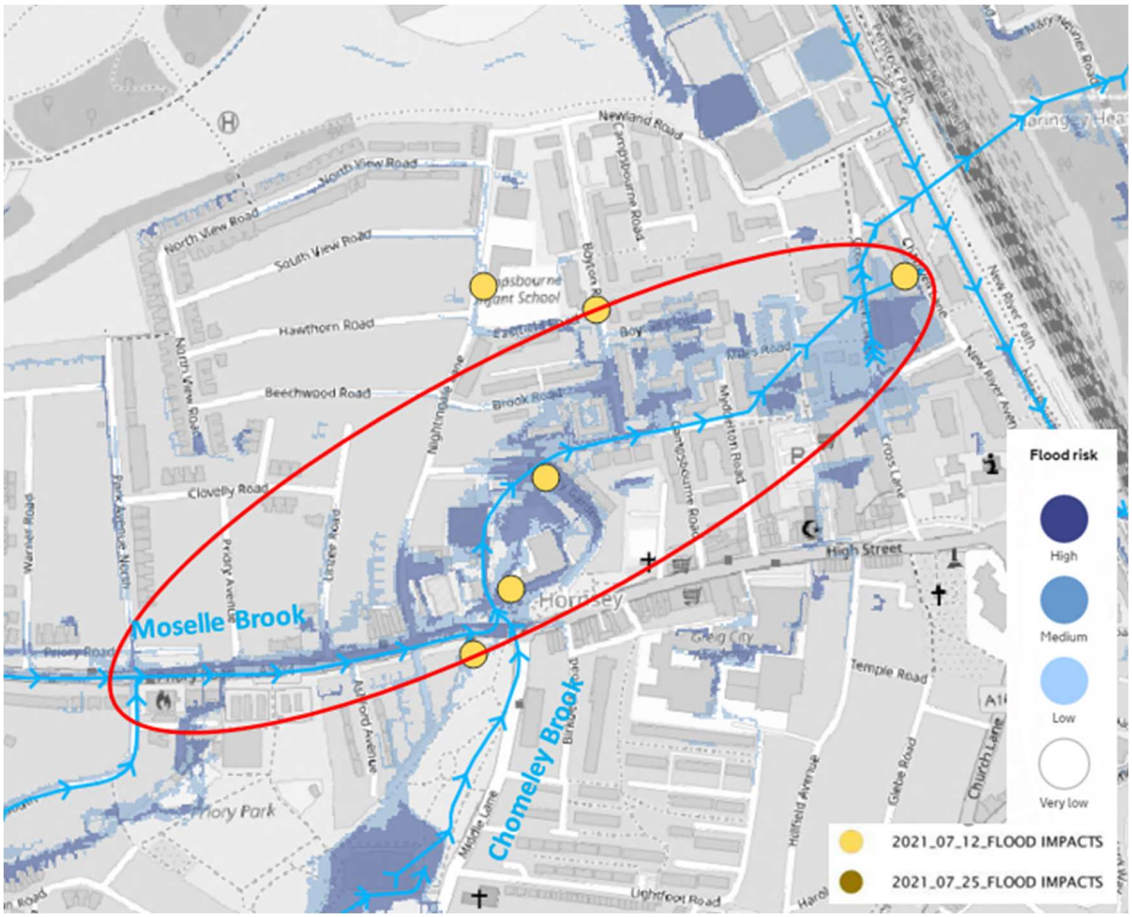
Figure 5-1 Recorded flood impacts and areas of interest in Hornsey and Crouch End

5.2 Priory Road/High Street area

Figure 5-2 Site Location

Location	Priory Road/High Street area

Location Plan:



5.2.1 Summary of Impact

12th July 2021

LFB started to receive flood related emergency calls from 17:59pm. A total of 9 calls were received throughout the evening from properties between Park Avenue South and the High Street railway underpass, in addition to 4 received by Thames Water and 6 received by Haringey Council. Highways and properties were affected at Park Avenue South, Priory Road, Linzee Road, Nightingale Lane, Pembroke Road, Boyton Road, Rectory Gardens and Great Amwell Lane.

An emergency call was received from St Mary's Primary School north of Rectory Gardens; no detail is given of the flooding but the school was forced to close. Residents at Colorado Apartments experienced backing up of their building drainage, causing flooding of their property; residents were moved to temporary accommodation due to the severity of the flooding within their homes. Residents of Rectory Gardens reported to Haringey Council how the carriageway was totally submerged and caused damage to parking vehicles. In some instances, the floodwaters had encroached into properties.

The Councillor for Crouch End, Luke Cawley-Harrison, reported to Haringey Council via email correspondences that he suspected that the concrete tank beneath Priory Park had reached capacity due to the volume of water ponding within the park.

The following was noted from the site walkover carried out on 26th October 2021

- Businesses at the roundabout junction of High Street and Priory Road described how surface water was observed flowing quickly down Middle Lane toward the roundabout. The rain gardens in Rectory Gardens were observed to quickly fill with surface water, after which flows then bypassed them and continued across local paths and highways adjacent to the park.
- One business owner on Middle Lane noted that this is the first time flooding has been experienced.

25th July 2021

There were no reports of flooding received on 25th July 2021.

5.2.2 Site Context

The topography in this area forms a localised valley around the junction of Priory Road, High Road and Middle Lane, with land falling to this point (28mAOD) from the higher reaches of the three roads (36mAOD to 42mAOD). The valley runs north-east through the Rectory Gardens and Pembroke Road toward the New River (25mAOD). The surface water flood map in Figure 5-2 indicates that flow routes from Priory Park, Priory Road and Park Avenue South converge close to the roundabout junction, from where surface water flows broadly follow the route of the localised valley.

5.2.3 Existing Drainage and Watercourses

Asset records indicate that the area is served by separate networks of foul water and surface water sewers. A foul culvert up to 1219mm diameter runs under High Street. Surface water sewers range from 229mm to 625mm throughout the feeder streets.

The DWMP model output indicates that most sewers along Priory Road, High Street and Middle Lane, as well as the flood affected streets north of High Street, are at risk of surcharging during a 1 in 2 year rainfall event.

A culverted section of the Moselle Brook flows east along Priory Road, converging with the Chomeley Brook at the roundabout junction before following the localised valley to the north-east, passing under the railway line and into Wood Green. The culvert diameter ranges up to 1828mm. Asset records indicate that local surface water sewers connect into the culvert.

5.2.4 Flood History

Appendix D, Figure 5 of the Haringey SWMP does not record any previous flood events in this area. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N8 0 postcode area, as of 2010.

5.2.5 Previous flood studies

Priory Road/High Street falls within CDA Group 4_055 (“North of Hornsey High Street and west of the mainline railway”). The CDA flood mapping shows overland flows following the path of the Moselle Brook catchment, with the embankment of the railway forming a restriction to overland flows. The crossing of the railway embankment is therefore considered to form a ‘pinch-point’ for surface water flows which reach this location. CDA mapping indicates estimated ponding of up to 0.5m depth west of the railway embankment.

5.2.6 Potential Flood Mechanisms

The site context and anecdotal evidence suggests that the primary cause of the flooding was the extent of rainfall which exceeded the capacity of the drainage network in this area.

The DWMP hydraulic model outputs suggests that the limited receiving capacity of the public sewer system and Moselle Brook culvert may have increased the risk of overland flows locally.

The intensity of the rainfall meant that it is likely that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low points around the roundabout junction of Priory Road and High Street, from where water would eventually breach kerb levels and follow the local valley topography, affecting roads, the school and residential properties along this route.

Colorado Apartments on Great Amwell Lane is noted from review of topography of the catchment and from site observations to be located in a localised low spot.

The current condition of Moselle Brook culvert is unknown. Any build up of silt within the culvert would result in a reduced capacity within the culvert and potentially cause surcharging within the surface waters sewers discharging to the culvert.

5.2.7 Responses to Flooding

Haringey Council:

- Actioned remedial works to cover the manhole in Priory Park to make it safe. Visits were also made to Boyton Road and Rectory Gardens on 12th July to inspect the flooding. The floodwaters had receded by the time the visits were made.
- Emergency Planning team visited residents in Hornsey and Crouch End on 13th and 16th July to collate reports on the impact of the flooding. Visits focused on High Street, Rathcoole Gardens, Rectory Gardens, Great Amwell Lane, Abbeville Road, Park Road, Nightingale Lane, Campsbourne Road and Brooke Road. A leaflet drop was also undertaken to provide residents with information on flood risk and potential mitigation.
- Arranged bulk collections of water damaged household items from the area on 20th July and 11th August.
- Provided a schedule of all gully cleaning works that have taken place in Hornsey and Crouch End between 12th July and 30th September 2021. A total of 1353 'jobs' were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with additional reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has introduced a new gully cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.
- Is progressing a flood alleviation scheme in the upstream catchment at Priory Park, with options including provision of a stormwater storage basin and opening up of a culverted watercourse within the park. This scheme is currently at outline design stage and will have a beneficial impact on the downstream area during periods of significant rainfall.
- Is progressing a SuDS scheme in the upstream catchment, which will include the introduction of SuDS features at Muswell Hill junction, Priory Road, Park Road, Etheldene Avenue and Farrer Mews. This scheme is currently at design stage and is likely to have a beneficial impact on the Priory Road and High Street area during periods of significant rainfall.
- Thames Water contacted by Haringey Council regarding the construction details of the underground storage tank at Priory Park to establish further details on the tank.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- Residents raised concern to Haringey Council that localised flooding in Hornsey is becoming more frequent, with questions raised as to whether the underground flood storage tank in Priory Park is still operating effectively. Haringey Council submitted an enquiry to Thames Water on 15th September about the current operational status of the tank, including the cleaning regime for the tank. Works were carried out on the surface water sewers around the storage tank between the 29th June to 1st July 2021. The storage tank was also surveyed. The survey works undertaken are indicate that the storage tank had no evident operational issues and would have been in operation on the dates considered as part of this study.
- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location at the time of writing.

London Fire Brigade

- LFB attended the property where emergency calls were received. No further details are recorded regarding remedial works.

5.2.8 Next steps

The EA surface water flood maps indicate that the Priory Road/High Street area is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

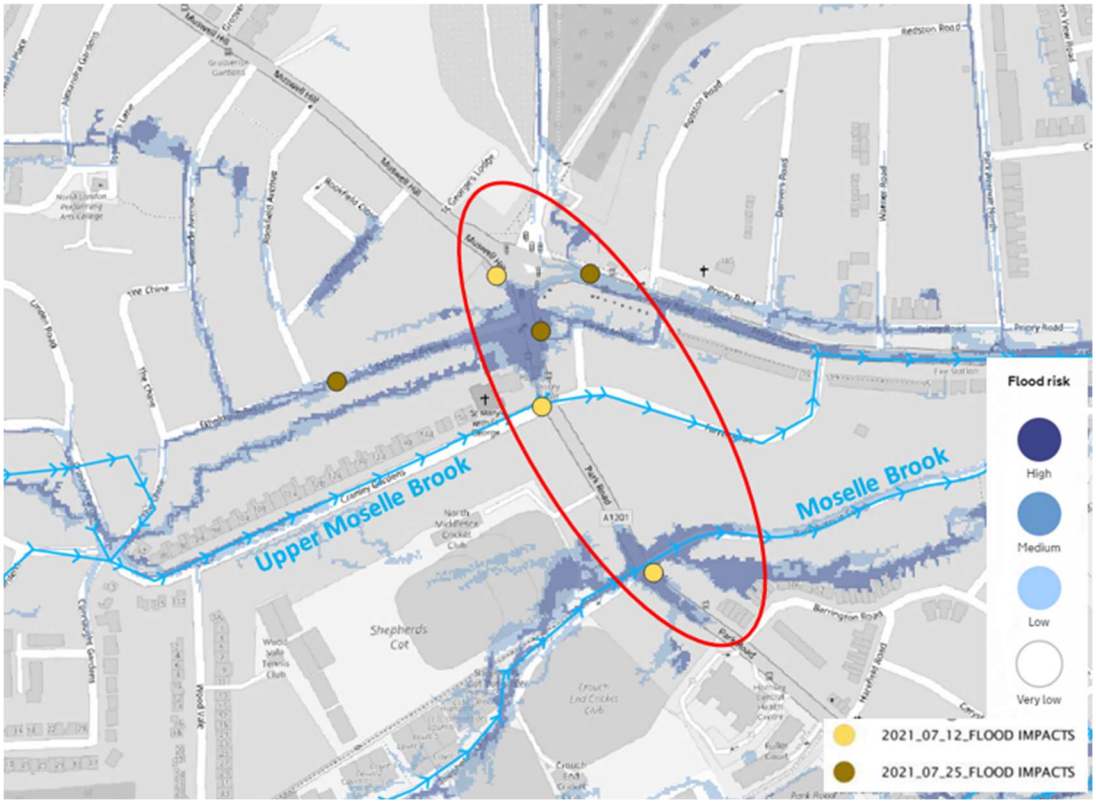
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- A review of the operational status and maintenance regime of the existing concrete tank is understood to be ongoing by Thames Water. Steps should be taken to optimise the functioning of the tank based upon the findings of the review.
- The SuDS feature at Rectory Gardens was observed to come into effect and be fully utilised. Consideration should be given by Haringey Council to implementation of further SuDS measures in the contributing catchment to reduce the volume and rate of runoff reaching the area at risk and reduce the load on the drainage infrastructure at this location.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.
- Thames Water to provide Haringey with details of the tank under Priory Park.
- EA to confirm operational status of Moselle Brook culvert from the reported incidents of flooding to the railway embankment (through survey or other means as appropriate) to demonstrate that the culvert is operating at intended capacity.

5.3 Park Road (North)

Figure 5-3 Site Location

Location	Park Road (North)

Location Plan:



5.3.1 Summary of Impact

12th July 2021

Reports of flooding were received from businesses in the northern extent of Park Road, where major flooding of the highway was reported as well as damage to footway paving at Etheldene Avenue and Cranley Gardens. Photographs and videos circulated on social media indicate the spread and depth of flooding along Park Road outside units 308-310 Park Road and the junction with Etheldene Avenue, as well as locals trying to unblock drains in the carriageways. This is shown below.

Figure 5-4 Flooding on Park Road and Etheldene Avenue, 12th July 2021

As the flood waters receded it became apparent that paving slabs and manhole covers had been lifted as shown below. Haringey Council instructed Marlborough Highways to attend the area to make safe the damaged footways and manholes.

Figure 5-5 Pavement damage, Cranley Gardens and Etheldene Avenue

Councillor Cawley-Harrison confirmed to Haringey Council via email that he made visits to flood affected residents following the 12th July flooding, during which it was noted that gullies outside units 308-310 Park Road remained blocked. Figure 5-6 below shows one of the gullies. Mr Carley-Harrison reported a further 50 blocked gullies to Haringey Council from Park Road along adjacent roads and junctions.

Figure 5-6 Failed attempt to unblock gully outside 308-310 Park Road

25th July 2021

Flooding was experienced in the area on 25th July 2021, which was noted to be less severe than experienced on the 12th July. Business at 308-310 Park Road was affected by internal flooding with flood waters reported to have come from the highway.

Businesses reported on social media that the gullies here had not been cleared after the 12th July flooding[5][6]. Minor flooding was reported the junction of Park Road and Muswell Hill. The report at Etheldene Avenue cited flooding within the street around blocked gullies.

5.3.2 Site Context

The northern extend of Park Road, prior to its junction with Muswell Hill and Priory Road, lies in a topographical low spot at circa 40mAOD. The adjacent streets, including Etheldene Avenue, Cranley Gardens, Farrer Road, Park Avenue South and Shepherd's Hill, all fall toward Park Road south of the junction. The carriageway rises toward Muswell Hill and Priory Road junction. Through the low spot, a total of 6 gullies are present over a 55m length of Park Road.

5.3.3 Existing Drainage and Watercourses

Asset records indicate a 381mm diameter surface water sewer in Park Road. A 1066mm diameter surface water sewer runs under Etheldene Avenue, crossing the Park Road/Muswell Hill junction and continuing downhill along Priory Road.

The DWMP model output indicates that most sewers along Etheldene Avenue, Park Avenue South and Cranley Gardens, are at risk of surcharging during a 1 in 2 year rainfall event. There is no indication of surcharging occurring during a 1 in 2 year event along the northern section of Park Road. The DWMP model does not indicate how large a rainfall event would cause surcharging or flooding along the northern section of Park Road.

A culverted section of the Moselle Brook passes through Cranley Gardens, crossing Park Road and continuing along Farrer Road, eventually reaching Priory Road from where it continues to the east.

5.3.4 Flood History

The Haringey SWMP does not record any instances of flooding at Park Road specifically. Appendix D, Figure 9 of the SWMP records up to 50 instances of flooding in the N8 8 postcode area, as of 2010.

5.3.5 Previous flood studies

The northern section of Park Road falls within CDA Group 4_055 ("North of Hornsey High Street and west of the mainline railway"). The CDA analysis shows potential flooding of up to 0.5m depth around the junction of Etheldene Avenue and Park Road.

5.3.6 Potential Flood Mechanisms

The photographic evidence, local topography and available flood reports suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area in combination with the lack of operational gully pots. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains / gully pots, the public sewer, or a combination.

- **Blocked Gullies**

  One of the business owners at 308-310 Park Lane has repeatedly asked for drains on Park Road to be cleared. During a visit by Councillor Cawley-Harrison following the 12th July floods, it was noted that the gullies outside the premises had still not been cleared despite the severity of the flooding observed. It was noted by the business owner and Councillor Cawley-Harrison that off the 6 gullies serving this low point, 5 were blocked during the 12th July event, and only 1 had been cleared prior to the 25th July event. Such blockages would have further reduced the capacity for surface water to enter reach the public sewer.

[5] Instagram, 2021 https://www.instagram.com/p/CRrnv91M6Fd/?utm_medium=twitter

[6] Twitter, 2021 https://twitter.com/WyckoffSmith/status/1419351919265472514

- **Threshold Heights**

  During the site walkover it was noted that a number of properties in the affected area had flush front door thresholds. Whilst important for accessibility, this arrangement would allow for surface water to quickly enter properties once the footway had been submerged. It was noted that since the 12th July flooding, the business at 308-310 Park Road have installed a flood gate to their shop entrance.

- **Sewer flooding**

  Photographs provided at Cranley Gardens and Etheldene Avenue indicate chamber covers that have been lifted during a flood event. It has not been confirmed whether these covers relate to the storm sewer.

5.3.7 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to unblock gullies along the road. It is not stated in the flood report schedules how many gullies were cleaned, but during a visit by Councillor Cawley-Harrison following the 12th July floods, gullies were still blocked.
- Emergency Planning team visited residents in Hornsey and Crouch End on 13th and 16th July to speak about the impact of the flooding. High Street, Rathcoole Gardens, Rectory Gardens, Great Amwell Lane, Abbeville Road, Park Road, Campbourne Road and Brooke Road were visited. A leaflet drop was also undertaken to provide residents with information on help during future floods.
- Arranged bulk collections of water damage household items to the area on 20th July and 11th August.
- Provided a schedule of all gully cleaning works that have taken place in Hornsey and Crouch End between 12th July and 30th September 2021. A total of 1353 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.
- Is progressing a SuDS scheme in the upstream catchment, which will include the introduction of SuDS features at Muswell Hill junction, Priory Road, Park Road, Etheldene Avenue and Farrer Mews. This scheme is currently at design stage and is likely to have a beneficial impact on Park Road during periods of significant rainfall.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location at the time of writing.

London Fire Brigade

- There are no records of LFB being contacted in this location.

5.3.8 Next steps

The EA surface water flood maps indicate that Park Road (north) is located in an area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to consider construction of additional road gullies to increase inlet capacity. Discussions with Thames Water would be required to confirm that there is sufficient capacity within the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Haringey Council to consider implementation of SuDS measures in the contributing catchment to reduce the volume and rate of runoff reaching the area at risk and reduce the load on the drainage infrastructure at this location.

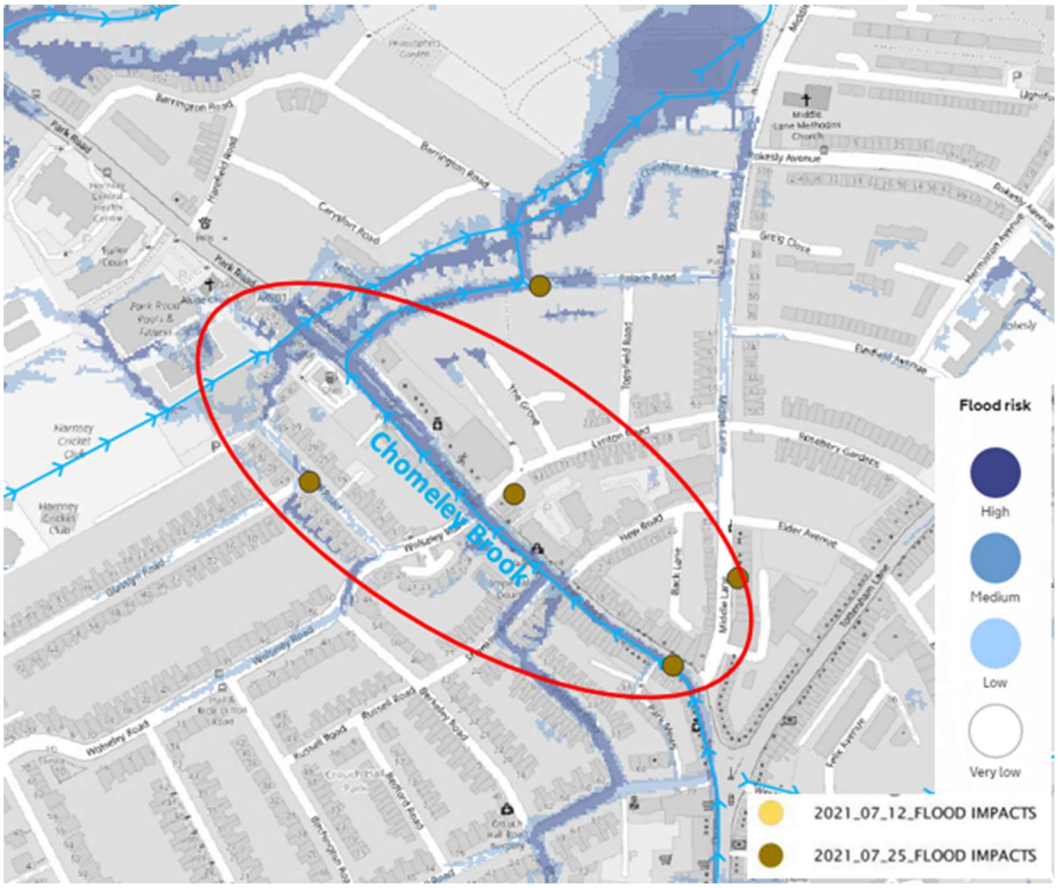
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Thames Water to consider inspection of the large surface water sewer passing through the Park Road / Muswell Hill junction, as well as the Moselle Brook culverts, to ensure they are at full operating capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.4 Park Road (South)

Figure 5-7 Site Location

Location	Park Road (South)

Location Plan:



5.4.1 Summary of Impact

12th July 2021

A total of 3 flooding-related emergency calls were recorded by LFB between 7pm and 9pm on 21st July, from southern extent of Park Road (Palace Road and Tivoli Road). LFB attended the calls but no further details on damage or remedial measures are recorded. Further details have been made available courtesy of email correspondences between Haringey Council and Councillor Cawley-Harrison, which contains observations of Councillor Cawley-Harrison's visit to the area following the floods. Details are also taken from minutes of a meeting between Haringey Council and the Glasslyn, Montenotte and Tivoli Residents Association (GMTRA).

Based on conversations held during Councillor Cawley-Harrison's visits, property owners (residents located along Palace Road and businesses between the Princess Alexandra and Maynard Arms pubs), experienced basement flooding which appeared to originate from underground sources rather than flows entering the basement from the surrounding surface catchment. The basement flooding in the Maynard Arms rose to circa 300mm depth.

Residents of Gransden House (115-119 Park Road), View Crescent and Tivoli Road described how surface water appeared to flood their properties from the road. The minutes of the GMTRA meeting indicate that most flooding of properties on View Crescent was limited to flooding of under floor spaces as a result of surface water entering the property via air bricks. Three garages and two conservatories were flooded on View Crescent, with one resident reporting up to 300mm depth of water. At least 36 properties on Tivoli Road and Glasslyn Road reported experienced flooding, 25 of which experienced basement or cellar flooding. Properties between 1 and 10 Glasslyn Road described the floodwaters as coming through the walls of their basements and cellars. Three residents also described how flooding within their property had occurred as a result of their drains backing up into their property. Other properties indicated that flooding had occurred in their properties as a result of build-up or runoff of surface water from their gardens, the roads and uphill properties.

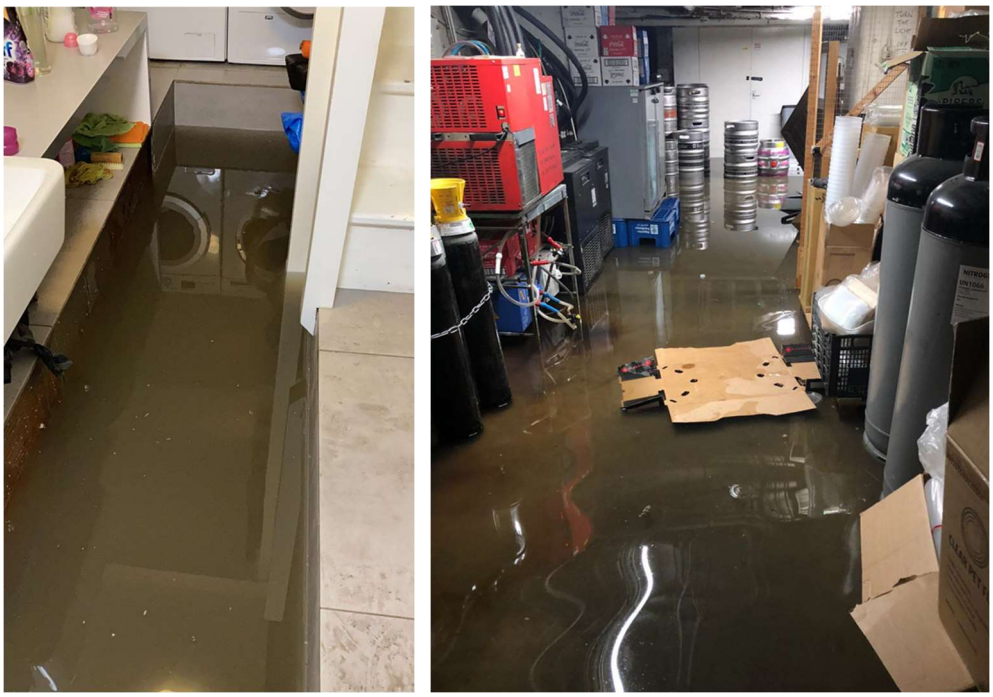


Figure 5-8 Flooding of property on Tivoli Road and Basement flooding in business, 70 Park Road, 12th July 2021

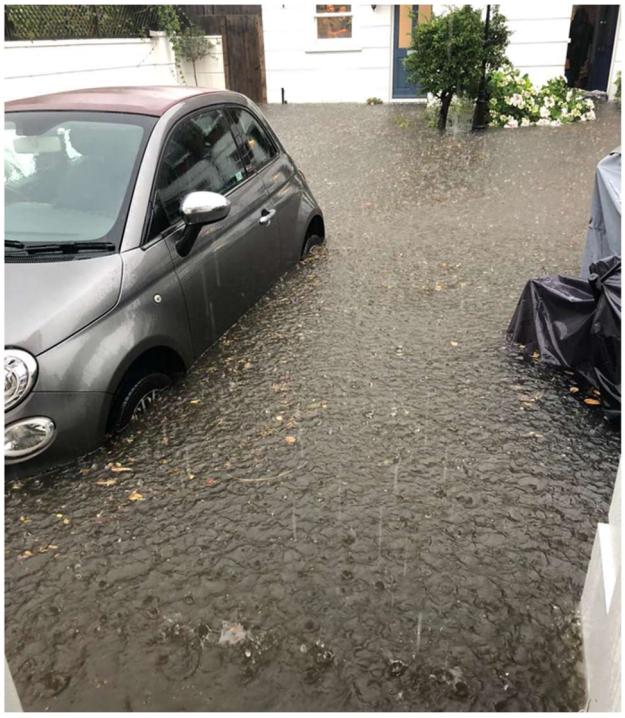


Figure 5-9 Flooding of property in Glasslyn, Montenotte and Tivoli Road area

25th July 2021

Further flooding was experienced in this area on 25th July but to a lesser extent in comparison to 12th July. The Maynard Arms observed up to 75mm of basement flooding, and minor flooding was experienced in Gransden House. Residents of View Crescent, Tivoli Road and Glasslyn Road experienced further flooding but it was noted that the highway flooding did not reach the same depths as on 12th of July, and properties on Glasslyn and Tivoli Road either experienced less flooding or were not affected.

Haringey have noted from a meeting with GMTRA, that "Many of the surface water problems were caused by rainwater flowing down Shepherds Hill into Montenotte Road and from Wolseley Rd into Tivoli Road".

5.4.2 Site Context

The southern section of Park Road forms a valley around the culverted tributary of the Moselle Brook. Park Road falls from the Hornsey Central Neighbourhood Health Centre in the north (40mAOD) to Gransden House and Princess Alexandra pub (37mAOD) before rising again toward the Crouch End clock tower (44mAOD). View Crescent and Tivoli Road are located within this low topographical area, immediately south of Gransden House. Roads from the south leading onto Park Road, including Glasslyn Road and Wolseley Road, are steep, falling from 69mAOD to 40mAOD over 345m (an average gradient of 1 in 12. This is reflected in the surface water flood maps, which shows areas of generally lower flood risk on the surrounding steep residential roads, and higher flood risk along Park Road and the topographical valley where overland flows would collect. The junction of Tivoli Road and Glasslyn Road also forms a localised low spot where floodwaters were observed by residents to collect.

5.4.3 Existing Drainage and Watercourses

Asset records indicate that the area is served by separate networks of foul water and surface water sewers. Surface water sewers range from 229mm to 750mm throughout the area.

The DWMP model indicates that most sewers along Park Road, are at risk of surcharging during a 1 in 2 year rainfall event. Sewers serving Tivoli Road, View Crescent, Palace Road and the northernmost extents of Glasslyn Road and Wolesley Roads are also indicated to be at risk of surcharging in a 1 in 2 year event.

A culverted tributary of the Moselle Brook flows from the west through Hornsey Cricket Club, crossing Park Road. The culvert passes through the rear gardens of Palace Road and Carysfort Road before entering Priory Park. The tributary and a culverted section of the Cholmeley Brook (which is a tributary of the Moselle Brook)

converge at Priory Park, the culverted Cholmeley Brook having flowed from the south along Park Road and Palace Road. Asset records indicate that culverted tributary of the Moselle Brook is 450mm diameter increasing to 838x559mm before joining with the Cholmeley Brook culvert (1066mm diameter) and flowing onwards.

5.4.4 Flood History

The Haringey SWMP does not record any instances of flooding at Park Road (south) specifically. Appendix D, Figure 9 of the SWMP records up to 50 instances of flooding in the N8 8 postcode area, as of 2010.

5.4.5 Previous flood studies

The southern section of Park Road falls within CDA Group 4_055 ("North of Hornsey High Street and west of the mainline railway"). The CDA analysis shows overland flows following the path of the Moselle Brook catchment, passing through Palace and Carysfort Roads and into Priory Park, with potential flood depths estimated to be up to 0.5m. Flood depths on Park Road are estimated to be up to 0.25m.

5.4.6 Potential Flood Mechanisms

The photographic evidence, local topography and available flood reports suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographical low points, causing flooding of the highway. Given the intensity of rainfall for the two rainfall events, it is likely that the rate of runoff may have exceeded the receiving capacity of gully pots on steeper streets such as Glasslyn and Wollesley Roads, resulting in more runoff reaching lower areas at Tivoli Road, View Crescent and Park Road.

Any surcharging or flooding of the culverted sections of the Cholmeley Brook and tributary of the Moselle Brook would have acted to increased flooding on the carriageways and footways.

The DWMP indicates that surcharging in most of the area occurs during a 1 in 2 year rainfall event, and residents of Tivoli Road experienced drains backing up and causing flooding in their homes, which suggests that it is the sewer capacity which was exceeded.

Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, the culverts, or a combination.

Other items were identified that may have affected the depth and magnitude of the flooding, including:

- **Blocked Gullies**

  During the GMTRA meeting, concerns were raised about the operating status of the gully pots at the junction of Tivoli and Glasslyn Roads as well as the steeper connecting roads. The concern is reiterated by Councillor Cawley-Harrison who reported 50 blocked gullies to Haringey Council following his community visit. During a site walkover on 26th October 2021, gully pots were inspected and found to be clear.

- **Groundwater Flooding**

  Basement / cellar flooding was reported in the area, with most occurrences located along Glasslyn and Tivoli Roads. Residents queried whether this was from groundwater or flooding from the culverted watercourses. There are no culverted watercourses within Glasslyn Road and Tivoli Road. The BGS online mapping tool shows that the underlying geology of the area is dominated by London Clay; this geological layer is largely impermeable and devoid of groundwater.

  A possible mechanism of flooding of basements and cellars may be the result of shallow / perched ground water with saturated upper layers of soil arising from the heavy rainfall. Further investigation of the local soil makeup in this area would be required to confirm whether this is a viable flood mechanism.

5.4.7 Responses to Flooding

Haringey Council:

- Emergency Planning team visited residents in Hornsey and Crouch End on 13th and 16th July to speak about the impact of the flooding. High Street, Rathcoole Gardens, Rectory Gardens, Great

Amwell Lane, Abbeville Road, Park Road, Campbourne Road and Brooke Road were visited. A leaflet drop was also undertaken to provide residents with information on help during future floods.

- Arranged bulk collections of water damage household items to the area on 20th July and 11th August
- For CDA Group 4_055 the SWMP identified options for providing surface water management within the upstream catchment (Queen's Wood and Hornsey Cricket Club). The Queen's Wood natural flood management project has been developed to design stage[7] and is likely to have a beneficial impact on Wood Vale during periods of significant rainfall.
- Provided a schedule of all gully cleaning works that have taken place in Hornsey and Crouch End between 12th July and 30th September 2021. A total of 1353 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.
- Is progressing a SuDS scheme in the upstream catchment, which will include the introduction of SuDS features at Muswell Hill junction, Priory Road, Park Road, Etheldene Avenue and Farrer Mews. This scheme is currently at design stage and is likely to have a beneficial impact on Park Road during periods of significant rainfall.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- The GMTRA minutes note that Thames Water attended Glasslyn Road to inspect the sewers following the flooding. It is noted in the GMTRA minutes that no blockages were found.
- No other information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location at the time of writing.

London Fire Brigade

- LFB attended the property where emergency calls were received. No further details are recorded regarding remedial works.

5.4.8 Next steps

The EA surface water flood maps indicate that Park Road (south) is located in an area prone to surface water flooding. The following measures may be considered to further reduce the risk and impact of flooding.

- Haringey Council to consider gully and grating selection along the steeper sections of roads to increase the inlet capacity of the drainage system to ensure that flows are not bypassing gully grating openings on steeper sections of highway during intense rainfall.
- Haringey Council to consider implementation of SuDS measures in the upslope catchment to reduce the amount of runoff reaching the location of flood risk.
- Affected property owners to consider installation of air vent covers and basement waterproofing. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Haringey Council to consider inspection of culverted Cholmeley Brook and tributary to ensure they are at maximum operating capacity. Where culvert is riparian responsibility and outcomes of survey indicate that the mechanism of flood is deficiency in the operational capacity of the culvert, Haringey to notify the respective riparian owners of their responsibilities and any subsequent actions to be undertaken.

  Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

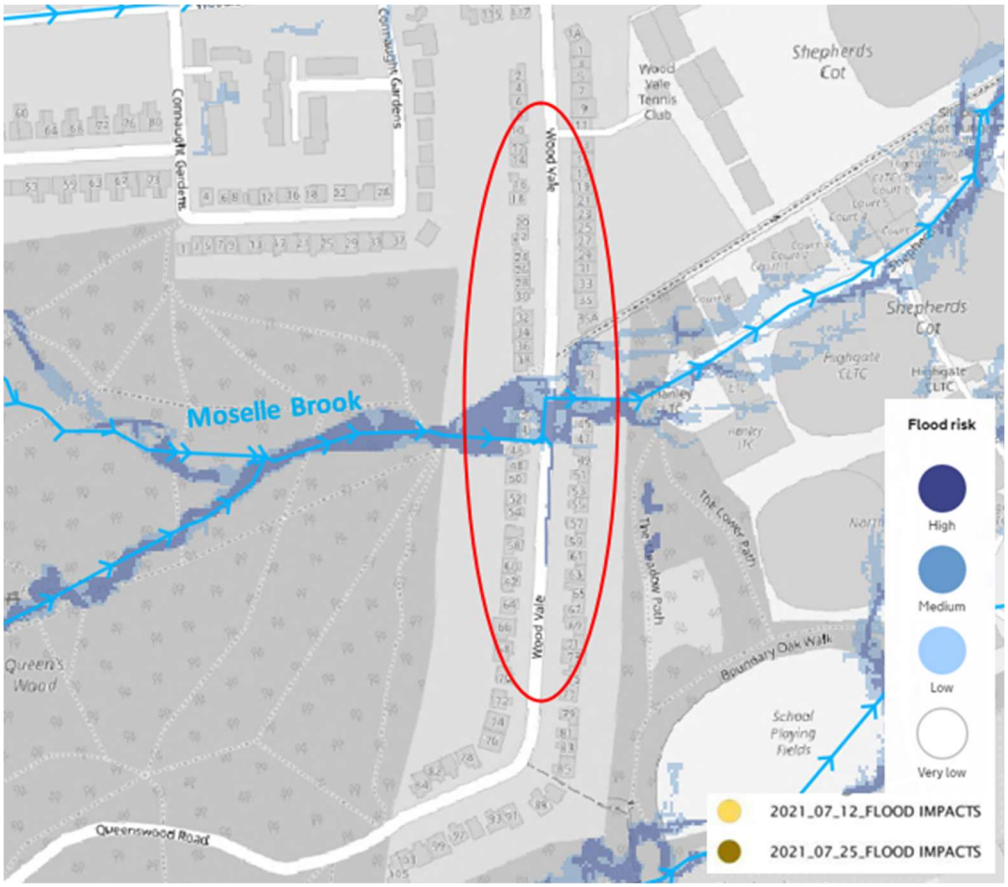
[7] https://www.haringey.gov.uk/sites/haringeygovuk/files/queens_wood_letter_to_residents_220221f.pdf

5.5 Wood Vale

Figure 5-10 Site Location

Location	Wood Vale

Location Plan:



5.5.1 Summary of Impact

12th July 2021

Flooding at Wood Vale was reported to Haringey Council via email correspondence from a resident on 13th July and was not recorded in the flood report schedule or mapping in Figure 5-10. The resident described how the main drain at the foot of the Queen's Wood could not take the water, resulting in at least 10 houses experiencing flooding (it was not confirmed whether this was internal or external flooding). The resident reported that the flood wall in the Queen's Wood was breached causing surface water to flow into residents' gardens. The resident reported that the gully pots further uphill on Wood Vale were blocked. Associated photographs of Wood Vale on 12th July are presented in Figure 5-11 below.

Figure 5-11 Flooding of highway and property along Wood Vale, 12th July 2021

25th July 2021

No information was received of flooding in Wood Value for 25th July.

5.5.2 Site Context

Wood Vale runs north to south, with high points on the northern and southern extents of the road (60-65mAOD) The roads falls steeply to its central section which lies at an approximate elevation of 52mAOD. Immediately to the west of Wood Vale lies Queen's Wood, a 21 hectare area of ancient woodland. The woodland generally falls toward Wood Vale, and a number of tributaries of the Moselle Brook are located within small valleys within the wood. These valleys converge within the wood, with the eventually culverted Moselle Brook emerging from Queen's Wood into Wood Vale. The highest surface water risk on the EA mapping is shown to generally follow the path of these watercourses. High surface water flood risk is also shown in the topographically lowest section of Wood Vale, as shown in Figure 5-10. Most properties are served by driveways and footways on both sides of the road are wide and planted with trees.

5.5.3 Existing Drainage and Watercourses

Asset records indicate one 229mm diameter foul water sewer and one 229mm diameter surface water sewer within Wood Vale.

The DWMP model output indicates that sewers in the southern section of Wood Vale, are at risk of surcharging during a 1 in 2 year rainfall event currently, whereas it is expected that the northern section would become at risk of such surcharging by 2035.

A culverted section of the Moselle Brook crosses Wood Vale at its topographically lowest point, emerging from Queen's Wood and continuing into Shepherd's Lane. The culvert reaches 610mm diameter through this section.

5.5.4 Flood History

The Haringey SWMP does not record any instances of flooding at Wood Vale specifically. Appendix D, Figure 9 of the SWMP records up to 10 instances of flooding in the N10 3 postcode area, as of 2010.

5.5.5 Previous flood studies

Wood Vale falls within CDA Group 4_055 ("North of Hornsey High Street and west of the mainline railway"). The CDA analysis shows overland flows following the path of the Moselle Brook through Queen's Wood and across Wood Vale, with potential flood depths estimated to be up to 0.25m.

5.5.6 Potential Flood Mechanisms

The photographic evidence, local topography and available flood reports suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity of the drainage network in this area. The intensity of the rainfall meant that surface water overwhelmed the existing drainage routes in Queen's Wood and was unable to enter the sewer network fast enough, resulting in overland flows accumulating in the topographical low point in Wood Vale and causing flooding of the highway. Given the intensity of rainfall, it is likely that the rate of runoff may have exceeded the receiving capacity of gully pots on the steeper sections of the road, resulting in more runoff reaching the low central section of Wood Vale. Surcharging or flooding of the Moselle Brook may have increased flooding on the carriageways and footways. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, the culverts, or a combination. The DWMP indicates that surcharging part of Wood Vale occurs during a 1 in 2 year rainfall event. In any case the following item was identified that may have affected the depth and magnitude of the flooding, including:

- **Blocked Gullies**

  Email correspondence between a resident of Wood Vale and Haringey Council indicates that gullies along Wood Vale were blocked.
- **Excessive flows from the upslope wooded catchment**

  Queen's Wood is a well used local resource for the community. The compaction of topsoil through footfall may have generated additional runoff than would be expected from a rural catchment woodland understorey.

5.5.7 Responses to Flooding

Haringey Council:

- For CDA Group 4_055, the SWMP identified options for providing surface water management within the upstream catchment (Queen's Wood and Hornsey Cricket Club). The Queen's Wood natural flood management project has been developed to design stage[8] and is likely to have a beneficial impact on Wood Vale during periods of significant rainfall.
- Provided a schedule of all gully cleaning works that have taken place in Hornsey and Crouch End between 12th July and 30th September 2021. A total of 1353 jobs were raised for gully clearance between these dates.
- Confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- Attended Wood Vale on 30th July 2021 and 2nd August 2021 to undertake clean-ups in response to the flooding. No further details of the clean-ups have been provided at time of writing.

London Fire Brigade

- LFB did not record any call outs to Wood Vale during the rainfall events.

[8] https://www.haringey.gov.uk/sites/haringeygovuk/files/queens_wood_letter_to_residents_220221f.pdf

5.5.8 Next Steps

The EA surface water flood maps indicate that Wood Vale is located in an area prone to surface water flooding. The following measures should be considered to reduce the risk and impact of flooding.

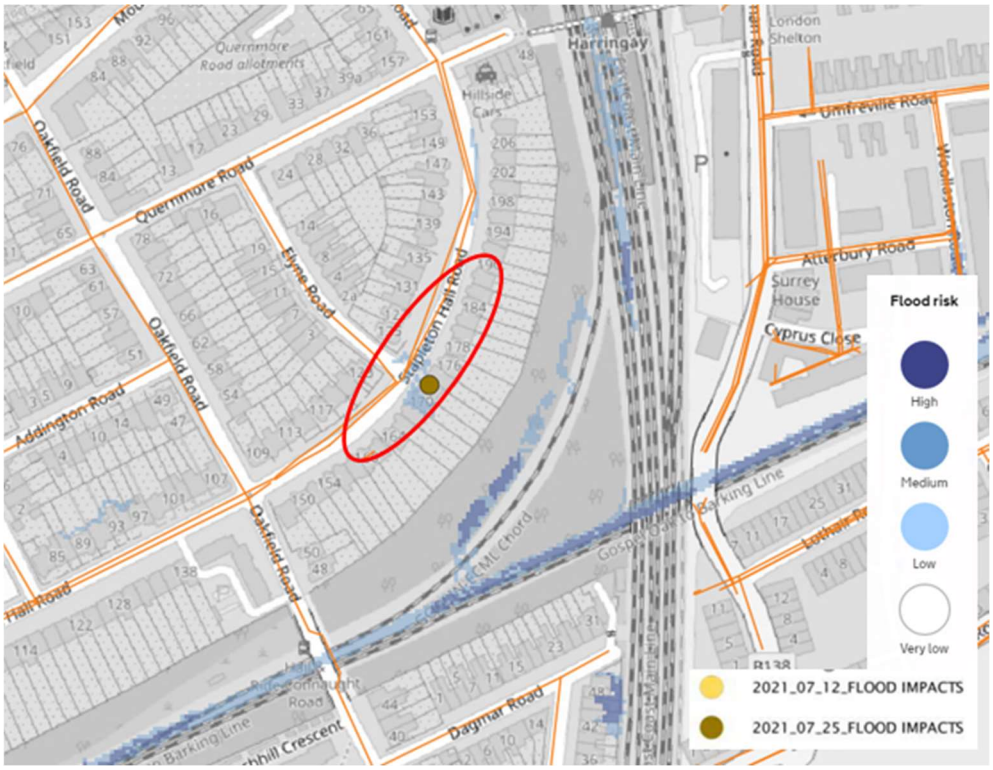
- Haringey Council to programme and undertake increased frequency gulley cleaning along Wood Vale.
- Haringey Council to consider gully and grating selection along the steeper sections of roads to increase the inlet capacity of the drainage system to ensure that flows are not bypassing gully grating openings on steeper sections of highway during intense rainfall.
- Haringey Council to consider SuDS measures in the contributing catchment. The Queen's Wood NFM scheme is still in development at time of writing. On street SuDS would help to slow down flows from the steep highways along Wood Vale.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Haringey Council to consider inspection of the Moselle Brook culvert to ensure it is working at maximum operating capacity.

5.6 Stapleton Hall Road

Figure 5-12 Site Location

Location	Stapleton Hall Road

Location Plan:



5.6.1 Summary of Impact

12th July 2021

There are no reports of flooding recorded on 12th July in this area.

25th July 2021

LFB received flooding related calls from Stapleton Hall Road at 16:24pm. Haringey Council also recorded a call from Stapleton Hall Road, where an unspecified number of properties had experienced flooding during the rainfall event. Subsequent video footage shows the carriageway and footways submerged in circa 300mm of water, as shown in Figure 5-13. No further information has been obtained for this location.

Figure 5-13 Flooding on Stapleton Hall Road, 25th July 2021

5.6.2 Site Context

Stapleton Hall Road lies on the south-eastern extent of the study area, adjacent to the mainline railways east and south. The road is located in the topographically lowest part of a wider residential area which includes Mount View Road, Albany Road, Granville Road and Oakfield Road. Most of these roads fall toward Stapleton Hall Road at steep gradients. The section of Stapleton Hall Road between Oakfield Road and Mount View Road is indicated to be at medium risk of surface water flooding.

5.6.3 Existing Drainage and Watercourses

Asset records indicate that the road, and wider residential area is served by combined sewers. A 305mm diameter pipe runs along Stapleton Hall Road.

The DWMP model output indicates that sewers in Stapleton Hall Road are at risk of surcharging during a 1 in 2 year rainfall event currently.

No watercourses were identified in this area.

5.6.4 Flood History

The Haringey SWMP does not record any instances of flooding on the road specifically and the road is not in a CDA. Appendix D, Figure 9 of the SWMP records up to 10 instances of flooding in the N4 4 postcode area, as of 2010.

5.6.5 Potential Flood Mechanisms

There is limited reported information on flooding at this location, but the photographic evidence, local topography and information from the DWMP suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that surface water was unable to enter the sewer network fast enough and accumulated in the topographically lowest part of the residential area along Stapleton Hall Road, causing flooding of the highway and flooding of properties. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, or a combination.

- **Bow wave effect**

  Video footage from the 25th July flooding along indicates that larger vehicles moving through the flood water caused a bow wave effect. Anecdotal reports from other parts of Haringey indicated bus movement had caused further movement of water onto the footway and into their properties.

5.6.6 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to unblock gullies along the road. It is not stated in the flood report schedules how many gullies were cleaned.
- Plan to carry out rectification works on existing SuDS features along the road in early 2022.
- Provided a schedule of all gully cleaning works that have taken place in Hornsey and Crouch End between 12th July and 30th September 2021. A total of 1353 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location at the time of writing.

London Fire Brigade

- LFB did not record any call outs to Wood Vale during the rainfall events.

5.6.7 Next Steps

The EA surface water flood maps indicate that Stapleton Hall Road is located in a topographically low area prone to surface water flooding. The following measures should be considered to reduce the risk and impact of flooding.

- Haringey Council to programme and undertake increased frequency of gully cleaning along Stapleton Hall Road.
- Haringey Council to consider construction of additional road gullies to increase inlet capacity. Discussions with Thames Water would be required to confirm that there is sufficient capacity within the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Haringey Council to consider implementation of further SuDS measures in the contributing catchment. It is understood from correspondence with Haringey Council that existing SuDS features are being improved.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

5.7 Weston Park

Figure 5-14 Site Location

Location	Weston Park

Location Plan:

5.7.1 Summary of Impact

12th July 2021

No flooding was reported to Haringey Council on 12th July from the Weston Park area.

25th July 2021

Three reports of flooding were received from the Weston Park area on 25th July. Businesses near the junctions of Nelson Road and Inderwick Road were reported to have been affected by flooding. One business noted that flooding of their premises was caused by drains backing up causing internal flooding. Email correspondence between Haringey Council and Councillor Cawley-Harrison indicates that residents along Weston Park had also experienced flooding. During a site walkover visit on 26th October 2021, a business owner at this location described how the manhole cover outside the shop had been lifted as a result of the volume of water emerging from it.

At Rathcoole Gardens minor flooding of the highway was reported.

5.7.2 Site Context

Weston Park falls in an easterly direction from its junction with Tottenham Lane (circa 45mAOD) to its junction with Uplands Road (circa 35mAOD). The roads then continue to fall north to Rathcoole Gardens, the lowest street in the area at 33mAOD.

5.7.3 Existing Drainage and Watercourses

Asset records indicate that surface water and foul water sewers are separate in this area. A 610mm diameter brick surface water sewer passes under Weston Park. Rathcoole Gardens and Rathcoole Avenue are served by 305mm to 525mm diameter sewers.

The DWMP model output indicates that sewers along Weston Park, adjoining streets, Rathcoole Gardens and Rathcoole Avenue are at risk of surcharging during a 1 in 2 year rainfall event.

A culverted section of the Stonebridge Brook passes through Weston Park, crossing Uplands Road and continuing under Cranford Way, the New River and the mainline railway. Asset records indicate that local surface water sewers connect into the culvert; the extent and nature of these would need further investigation.

5.7.4 Flood History

The Haringey SWMP does not record any instances of flooding at Weston Park specifically. Appendix D, Figure 9 of the SWMP records up to 5 instances of flooding in the N8 9 postcode area, as of 2010.

5.7.5 Previous Flood Studies

The Weston Park area is within CDA Group 4_056 ("Rathcoole Gardens, Hornsey Vale"). The CDA analysis indicates that the natural outfall from this area has been integrated into the drainage network beneath the railway and the New River, which both form man made obstacles to overland flow.

5.7.6 Potential Flood Mechanisms

The asset plans and anecdotal evidence suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. The intensity of the rainfall meant that sewers quickly reached capacity, leading to lifting of manhole lids and backing up of drains into properties, causing flooding of the highway property. The surcharging or flooding of the Stonebridge Culvert may have increased flooding on the carriageways and footways. Further investigation would be required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, the culvert, or a combination.

- **Blocked Gullies**

  Haringey Council's flood report schedule indicates that reactive crews where instruction to check for blocked gullies at Rathcoole Gardens. Such blockages would have further reduced the capacity for surface water to enter reach the public sewer at this low topographical point.

5.7.7 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to check and unblock gullies along Rathcoole Gardens. It is not stated in the flood report schedules how many gullies were cleaned, but a site walkover on 26th October 2021 showed that leaf litter had quickly built up along the roadsides, highlighting the need for regular maintenance in risk areas such as this.
- Emergency Planning team visit residents in Hornsey and Crouch End on 13th and 16th July to speak about the impact of the flooding. High Street, Rathcoole Gardens, Rectory Gardens, Great Amwell Lane, Abbeville Road, Park Road, Campbourne Road and Brooke Road were visited. A leaflet drop was also undertaken to provide residents with information on help during future floods.
- Arranged bulk collections of water damage household items to the area on 20th July and 11th August.
- Provided a schedule of all gully cleaning works that have taken place in Hornsey and Crouch End between 12th July and 30th September 2021. A total of 1353 jobs were raised for gully clearance between these dates. Haringey Council confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The Council has now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No other information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location at the time of writing.

London Fire Brigade

- LFB received a flood related emergency call from the Weston Park but no further details are provided on the response.

5.7.8 Next steps

The EA surface water flood maps indicate that Weston Park is located in a CDA area prone to surface water flooding. The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council should programme and undertake increased frequency of gully cleaning along High Road and particularly through Rathcoole Gardens.
- Haringey Council to consider construction of additional road gullies to increase inlet capacity. Discussions with Thames Water would be required to confirm that there is sufficient capacity within the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Haringey Council to consider implementation of SuDS measures in the contributing catchment.
- Affected property owners to consider installation of demountable flood gates, flood doors and air vent covers. Properties should be surveyed by qualified professionals to ensure that all openings have been identified and defences properly specified. Properties at the lower parts of Rathcoole Gardens and Rathcoole Avenue are already identified in CDA Group 4_056 in the SWMP as suitable areas for introduction of flood resistant and flood resilience measures.
- Haringey Council to consider inspection of the Stonebridge Brook culvert to ensure it is working at operating capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate. In particular
    - Thames Water to consider inspection of the brick surface water sewer in Weston Park to ensure it is working at operating capacity.

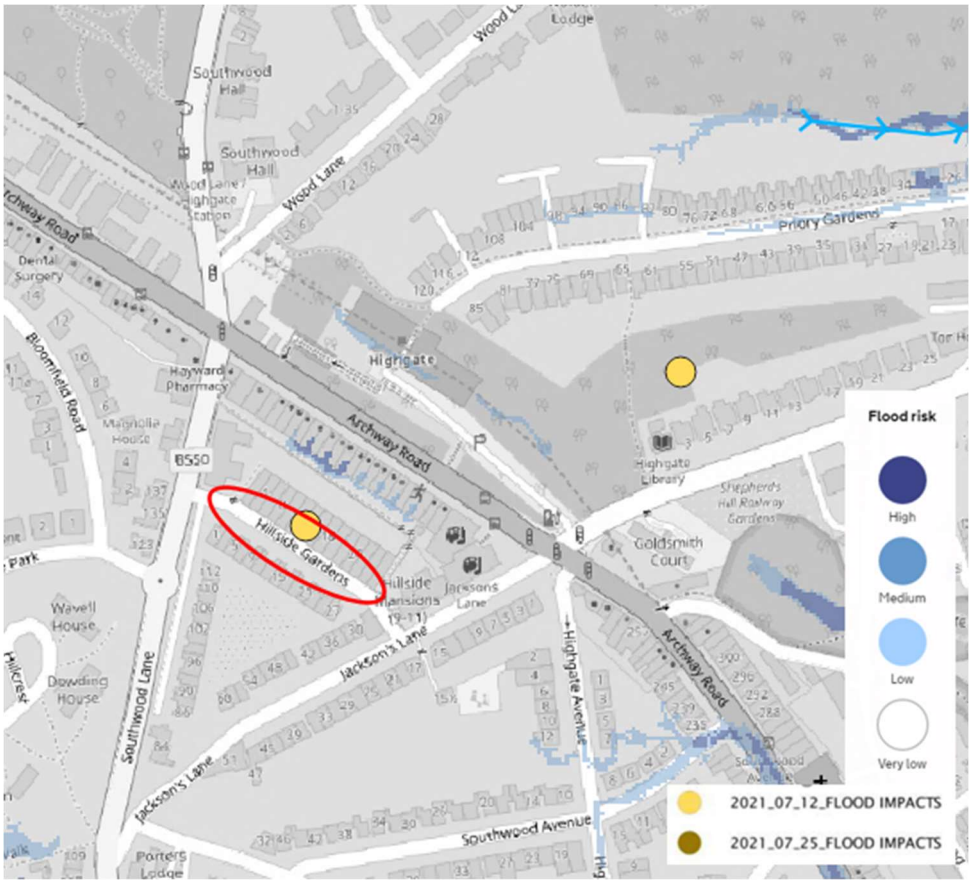
      Thames Water to consider increased below ground stormwater storage infrastructure to reduce pressure on the existing drainage system. Sections of Weston Park are already identified for such works CDA Group 4_056 within the SWMP.

5.8 Hillside Gardens

Figure 5-15 Site Location

Location	Hillside Gardens

Location Plan:



5.8.1 Summary of Impact

12th July 2021

A report of flooding was received from Hillside Gardens, where flooding of the highway was reported. Reactionary crews have noted that some flood water may have encroached into properties. At the time of a visit that evening by Haringey Council, some flood water remained on the carriageway and partially covered one of the footways, as shown in Figure 5-16. Marlborough Highways were called to supply sandbags to residents.

25th July 2021

LFB received a flood related emergency phone call at 13:29pm from Hillside Gardens. LFB attended the call but no further details are provided on the call out.

Figure 5-16 Flooding at Hillside Gardens, 12th July 2021

5.8.2 Site Context

Hillside Gardens is located between Southwood Lane and Jackson's Lane, two roads which fall quickly toward Archway Road. Hillside Gardens forms junctions with both lanes and generally follows the topographical contours, hence gradients within the street are reasonably gradual.

5.8.3 Existing Drainage and Watercourses

Asset records indicate that a 229mm diameter surface water sewer is located in Hillside Gardens, separate from the foul sewer. The records indicate that this drains to Jackson's Lane.

The DWMP does provide any information related to the risk of surcharging or sewer flooding for the street.

There are no watercourses identified in this area.

5.8.4 Flood History

The Haringey SWMP does not record any instances of flooding at Hillside Gardens specifically. Appendix D, Figure 9 of the SWMP records up to 10 instances of flooding in the N6 5 postcode area, as of 2010.

Hillside Gardens falls within CDA Group 4_055 ("North of Hornsey High Street and west of the mainline railway"). The CDA analysis shows scattered areas of medium surface water flood risk through the street and adjacent lanes.

5.8.5 Potential Flood Mechanisms

The photographic evidence suggests that the primary cause of the flooding was excessive rainfall which exceeded the capacity drainage network in this area. Exceedance flows from properties higher up the hill may have reached Hillside Gardens where it ponded in localised low spots. Further investigation would be

required to identify whether the capacity issues were primarily due to the receiving capacity of the highway drains, the public sewer, or a combination.

5.8.6 Responses to Flooding

Haringey Council:

- Instructed Marlborough Highways to attend the site, make safe and supply sandbags.
- Confirmed via email that gully cleaning occurs on a cyclical basis, with reactive maintenance where required. The proposed cycle was to clean all the gullies in the borough once every two years and clean all gullies in Critical Drainage Areas every year. The council now increased its gully cleaning capacity to 2 No. cleaning machines. Its new cleaning programme started in first week of October and the aim is to have cleaned all the gullies in the borough by Summer 2022.

Transport for London

- No TfL assets were affected in this location.

Thames Water

- No other information on response or remedial works undertaken by Thames Water was provided by Thames Water for this location at the time of writing.

London Fire Brigade

- LFA were called on 12th July to attend a flood related emergency at Hillside Gardens, but no further information is provided on their response.

5.8.7 Next steps

The following measures may be considered to reduce the risk and impact of flooding.

- Haringey Council to consider further investigation into the specific nature and extent of flooding experienced by properties.
- Haringey Council to consider construction of additional road gullies to increase inlet capacity. Discussions with Thames Water would be required to confirm that there is sufficient capacity within in the receiving storm sewer network to facilitate additional inlet connections. Additional connections to the sewer would require the consent of Thames Water.
- Haringey Council to consider inspection of the local highway sewers to ensure they are working to operating capacity.
- Thames Water to consider a review of the local sewer network to identify locations where surface water sewers have insufficient capacity and work with other RMAs to identify potential mitigation as appropriate.

6 SUMMARY

The flooding that occurred on 12th July and 25th July 2021 in Hornsey and Crouch End was caused by storms ranging from a 1 in 20 to a 1 in 50 year event, and in some locations potentially up to a 1 in 70 year rainfall event. Traditional pipe and gully pot drainage systems were historically not designed to deal with the rainfall intensity / severity experienced on these dates.

It is understood that there are no programmes for Thames Water to invest in upscaling its local drainage networks to provide additional sewer capacity.

Other factors have been identified which may have caused flooding at the respective locations identified within this report, which include;

- Blocked gully pots observed during the site visits to the respective locations.
- Lack of capacity within surface water sewers (as noted by recorded reports of flooding and outputs from DWMP models)
- Potential lack of operational capacity within culverted main and ordinary watercourses.
- Potential perched groundwater caused by saturated ground conditions affecting basements.
- Propagation of flood waters by passage of vehicles through flood waters causing bow waves.

Thames Water were unable to provide location specific data or actions carried out in relation to a number of the flood locations considered by this Section 19 assessment.

Thames Water has indicated that they have undertaken an internal review, (which considers the wider London catchment) to examine the actions taken ahead of, during and after the July 2021 storm events. This review concluded that the two key areas in which customers were let down was the initial response on the ground and lack of Thames Water customer contact provision during the events.

A further Independent Review has been commissioned by Thames Water into the causes and impacts of flooding, with a detailed assessment of sewer performance, which is due to be completed by Spring 2022.

It is understood that there are no current programmes for Thames Water to invest in upgrading local drainage networks to provide additional sewer capacity in the Hornsey and Crouch End areas.

6.1 Next steps

Haringey Council has committed to programme and undertake future gully cleaning throughout Haringey which is proposed to be completed by Summer 2022.

Other actions are recommended and are summarised below:

- The outcomes of the Thames Water independent review (due 2022) to be shared with other RMAs to ensure that mechanisms of flood can be better understood and any actions identified from the review can be developed jointly with other RMAs (as appropriate).
- Priority should be given to cleaning of gully pots in areas of known surface water flood risk.
- Localised temporary road closures or diversions are recommended in high-risk areas with low profile kerbs to reduce ingress of floodwaters onto footways and into properties where risk of internal flooding is caused by bow wave affect from the movement of vehicles through flood waters.
- Homeowners and businesses should be aware of their risk of flooding and investigate flood resilience and resistant measures to protect affected properties. Haringey Council offers advice through its website[9]. This link also provides information on how to sign up for flood warnings.
- Haringey Council to consider further retrofitting of SuDS to manage excess storm runoff.
- Haringey Council to consider inspection of culverted Cholmeley Brook and tributary to ensure they are at maximum operating capacity. Where culvert is riparian responsibility and outcomes of survey indicate that the mechanism of flood is deficiency in the operational capacity of the culvert, Haringey to notify the respective riparian owners of their responsibilities and any subsequent actions to be undertaken.

[9] Be prepared for flooding. Haringey Council, 2021, available at https://www.haringey.gov.uk/environment-and-waste/major-emergencies/drainage-and-flooding/be-prepared-flooding, accessed 12th November 2021.

Report for: Cabinet Member Signing – 7 March 2022

Title: Highways and Street Lighting Investment Plan

Report authorised by: Stephen McDonnell, Director of Environment and Neighbourhoods

Lead Officer: Ann Cunningham, Head of Highways and Parking, 020 8489 1355, Ann.Cunningham@haringey.gov.uk , and Peter Boddy, Highways and Traffic Manager, 020 8489 1765, Peter.Boddy@haringey.gov.uk

Ward(s) affected: All

Report for Key/ Non-Key Decision: Key Decision

1 Describe the issue under consideration

1.1 This report makes recommendations for investment in Haringey's highways infrastructure during 2022/23 and particularly covers footway, carriageway and street lighting assets, as well as providing details of some traffic schemes. The report also provides an update on the insourcing of highways reactive maintenance.

1.2 Investment in Haringey's local highways network is critical to delivering the Council's ambitions to make Haringey a better and safe place to live, encouraging growth and attracting investment, and creating opportunities that all can share in.

1.3 The investment recommended in this report has been identified to meet the Borough Plan[1] objectives and the Transport Strategy[2]. The key objectives within the Transport Strategy are as follows:

- A public transport network that is better connected, has greater capacity and is more accessible, supporting our growth ambitions;
- A well-maintained road network that is less congested and safer;
- Active travel the easier choice, with more people choosing to travel by walking or cycling;
- Improved air quality and a reduction in carbon emissions from transport.

1.4 Appendices 1, 2 and 3 of this report set out the recommended investment and, where relevant, expected funding streams for 2022/23 for various works to highways infrastructure assets and on the local highway network.

[1] https://www.haringey.gov.uk/local-democracy/policies-and-strategies/borough-plan
[2] https://www.haringey.gov.uk/parking-roads-and-travel/travel/haringeys-transport-strategy

1.5 The plan – which covers a number of service areas – will be collectively referred to as the Highways and Street Lighting Investment Plan (HSLIP).

2 Cabinet Member Introduction

2.1 Highways play a pivotal role in our daily lives. Whether we are working from home, commuting to work, taking exercise or meeting family and friends - we all rely upon welcoming and accessible streets and public realm.

2.2 Haringey is one of London's best-connected boroughs and the transport network is - and will continue to be well used by our residents, businesses and by people from across the city and beyond.

2.3 Street lighting not only improves safety for drivers, riders , and pedestrians, where driving at night is more dangerous, but reduces crime and fear of crime, in our urban areas. The recent resident perception survey highlights reduced confidence in personal safety, especially among women, at night-time. The continuing investment in streetlighting alongside the development of a lighting policy and continuing to collaborate with other partners and agencies will also support improvements in community safety.

2.4 It is therefore important that we keep up the investment in our streets and continue to press forward with our aim to ensure that Haringey has a high quality and safe highways with a reliable public transport system that is accessible to all.

2.5 I am therefore pleased to present our investment in highways and street lighting for the coming year, setting out the projects and programmes, including our work to insource highways maintenance subject to final decision by Cabinet in the summer. This represents a total investment of £9.219m inclusive of capital growth.

2.6 Engagement with residents, businesses and other interested parties will continue when developing highways schemes and the projects will allow contribution to the design solution of major schemes, where applicable.

3 Recommendations

The Cabinet Member is asked:

3.1 To approve the investment of £8.754m in highway assets for 2022/23, as set out in Appendix 1 of this report;

3.2 To approve the investment of £1.3m in lighting assets for 2022/23, as set out in Appendix 2 of this report;

3.3 To approve and note the investment of £0.350m in traffic schemes for 2022/23, as set out in Appendix 3 of this report;

3.4 To delegate decisions relating to highways infrastructure asset maintenance, and highways and traffic improvement scheme design and implementation to the Head of Highways and Parking;

3.5 To authorise the Head of Highways and Parking to carry out any required consultation in accordance with Appendix 4 and to make any necessary traffic management orders, having had due regard to any prior consultation, to give effect to those schemes;

3.6 To authorise the Head of Highways and Parking to consider any objections and representations on highways and traffic improvement schemes and to report back to the Cabinet Member for Customer Service, Welfare and the Public Realm if there are significant or substantial objections or concerns raised; and

3.7 To note the progress made on the insourcing of highways reactive maintenance.

4 Reasons for Decision

4.1 This report sets out the 2022/23 investment in the Council's local highways infrastructure, the improvements that are planned, the programme for the future potential insourcing of highways reactive maintenance and how these activities align with the Council's strategic objectives.

4.2 The report provides detail of the funding arrangements and seeks authority to proceed with the development and delivery of these projects, subject to appropriate consultation.

5 Alternative options considered

5.1 Allocated funding is insufficient to cover all existing maintenance needs, so the proposals prioritise the essential works that need to be delivered. The 2022/23 investment plan has been informed by the Council's Transport Strategy, the Local Investment Plan (LIP) - which involved consultation with key stakeholders - and the emerging, updated Highways Asset Management Plan.

5.2 The maintenance works programmes are prioritised through visual inspections and highway condition surveys by officers, and concerns raised by Members and by the wider community.

5.3 The lantern and column replacement programme for street lighting is developed around electrical and structural condition surveys, scouting, road hierarchy, visual inspections, lighting levels, and regeneration all to ensure that investment is targeted where most needed.

6 Background Information - Insourcing

Insourcing of highways reactive maintenance

6.1 In a report to Cabinet on 10th March 2020 entitled 'Insourcing Action Plan', clarity was provided on the structured approach to be taken for insourcing. The report identified that, in many areas, a phased approach may be required which builds the skills and capability of in-house staff before moving comprehensively to new models of delivery.

6.2 The report went on to clarify that an 'Enabling Framework' approach would provide structure in providing evidence-based information to inform the decision-making process. It also set out how services would be reviewed with the preferred outcome that they be brought in-house to a direct or hybrid service model on a sustainable and legal basis. Projects would have to be supported by a full financial assessment of the options to assist in establishing their affordability and value for money.

6.3 The four steps in the 'methodology overview' were defined as initial assessment, detailed modelling/commissioning, decision and transition. Decisions as to whether to bring services in-house would be made within the Council's existing constitutional framework, according to the scale and nature of the services under consideration.

6.4 When establishing the 'Provision of Highway Maintenance' contract (awarded to Marlborough Highways with a start date of 1st July 2020), provision was made for the potential transition to a partial in-house highway's reactive maintenance service – an approach accepted by Marlborough Highways.

6.5 In the Highways and Public Realm Investment Plan report submitted to Cabinet on 9th March 2021, it was clarified that insourcing options were being considered and a further report was expected to be presented to Cabinet during 2021/22. This section of the Highways and Street Lighting Investment Plan 2022/23 report addresses that point.

Initial assessment work

6.6 Considerable work has been completed to date that includes:

(a) A full appraisal of the current delivery arrangements to understand the areas for improvement for the highway maintenance service ('the service') going forward.

(b) Structuring the current delivery arrangements with an external contractor to allow for flexibility to reconfigure services during the contract term to be able to introduce alternative delivery arrangements to create a mixed economy of provision.

(c) A full options appraisal including initial detailed costings to determine the future preferred delivery arrangements for the service. This includes Investigation into four potential options for staffing requirements of the in-house highways maintenance service (of which initial secondment and future transfer of front-line staff from the existing contractor appears to be the most viable)

(d) Collaboration with and a commitment to ongoing dialogue and mutual support with other London Boroughs seeking to introduce similar future service delivery arrangements.

6.7 The ongoing work is underpinned by robust project governance. The project management arrangements include a project board (operating under defined terms of reference), a detailed project plan and a comprehensive risk register.

Detailed modelling/commissioning through to 'decision'

6.8 In line with the Enabling Framework approach, the next step entails engagement with Marlborough Highways on contractual specifics in order that a detailed business case can be completed and potentially advanced through to a future meeting of the Cabinet for a decision to proceed or otherwise. The outline schedule of activity for this is as follows:

	Task	Timeline
1.	Detailed discussions with the contractor to confirm agreement and the costs for: seconded staff; supply of vehicles, plant, equipment and materials; and provision of a permitting function and depot facilities.	February/ March 2022
2.	Detailed discussions with the contractor on future roles and responsibilities for: highways maintenance; governance arrangements; and a shared performance framework to support integrated working.	February/ March 2022
3.	Refinement of financial projections for the preferred option for the initiation of a new direct service organisation (DSO).	February/ March 2022
4.	Development of a formal secondment agreement with the input from the contractor, HR, and Legal Services.	April 2022
5.	Agreement with the contractor of future roles and responsibilities for highways maintenance; governance arrangements; and a shared performance framework to support integrated working.	April 2022
6.	Drafting job descriptions and specification for the directly employed DSO supervisory and management staff to confirm resourcing needed and associated costs.	April 2022
7.	Development of the operating model for the DSO to include: • The principles for the deployment arrangements for the contractor and DSO • Confirmation of the staff, vehicle, plant and equipment to be deployed against the deployment arrangements.	April 2022
8.	Agreeing the health and safety policy and procedures to be developed for the DSO, including consultation with the	April 2022

	Task	Timeline
	contractor (to reflect the secondment of their staff) and the corporate lead for health and safety for the Council.	
9.	Finalisation of the detailed financial projections for the DSO business case; including the management of in-year inflationary costs with input from Financial Services.	April 2022
10	Consideration of the draft DSO business case by the Commercial Board and Corporate Board.	May 2022
11	Consideration of the draft DSO business case by the Cabinet Advisory Board.	May 2022
12	Presentation of the DSO business case report to Cabinet	June 2022

Transition

6.9 If the decision taken at Cabinet in June 2022 is to proceed with the introduction of an in-house highways' reactive maintenance service, the following outline schedule of activity would follow:

	Task	Timeline
	Phase 3: Mobilisation of the DSO	
1.	Development of the training matrix for mandatory training to deliver reactive and planned maintenance activities to be undertaken by the DSO, with input from the contractor.	August 2022
2.	Development of operational and health and safety policies, procedures, and safe working practices for the DSO.	August 2022
3.	Amendment of the contractor's HR policies and procedures to accommodate the secondment arrangements, to include workforce engagement.	September 2022
4.	Recruitment and induction of the DSO Supervisor and Manager.	September 2022
5.	Confirmation of depot facility requirements including agreement with the contractor.	September 20 22
6.	Confirmation of insurance provision required by the DSO.	September 20 22
7.	Drafting and agreement with the contractor of the Deed of Variation to the term highways maintenance contract.	September 2022
8.	Procurement of vehicles, plant and equipment for the DSO.	October 2022
9.	Induction and training of the seconded staff.	October 2022

	Task	Timeline
10	Planned commencement date.	31 October 2022

7. Investment in Highways Infrastructure Assets in 2022/23

7.1 The recommended investment in Haringey's highways infrastructure during 2022/23 in this report relates to footway, carriageway, structure, non-illuminated street furniture, street lighting and illuminated street furniture assets, but excludes investment in drainage assets (such as road gully cleansing and repairs) as that detail is provided as part of the Flood Water Management Investment Plan report to Cabinet. The investment in 2022/23 addressed in this report includes for some traffic schemes.

7.2 The overall investment is set out in the following sections of this report and detailed in the corresponding appendices:

Service area	Report section	Investment details
Footway, carriageway, structure and non-illuminated street furniture infrastructure assets	8	Appendix 1
Street lighting and illuminated street furniture assets	9	Appendix 2
Traffic schemes	10	Appendix 3

8. Footway, carriageway, structure and non-illuminated street furniture infrastructure assets

8.1 Investment in Haringey's (non-lighting related) highway infrastructure assets is broken down in this report into the following programmes:

- Planned carriageway and footway maintenance
- Highways structures, e.g., bridges
- Non-illuminated street furniture

Planned carriageway and footway maintenance – £4.769m investment

8.2 The proposed investment is detailed in Appendix 1: Tables 1, 4 and 6.

8.3 A well-maintained road network contributes to road safety, improving road conditions whilst reducing trip hazards and road traffic collisions. It also encourages active travel and reduces transport-related air pollution.

8.4 The 5-year long-term investment in footway and carriageway maintenance will make a significant impact to the highway condition and could result in up to 60km of footway reconstruction and 50km of carriageway resurfacing works.

8.5 In 2022/23, £4.769m is being invested in roads, footways, responsive maintenance and ad hoc improvement. This investment will allow the Council to resurface approximately 5.3km of road resurfacing and reconstruction of 7km of footway. Historically, this investment amount has included resurfacing of principal roads and at the time of writing this report, TfL has not indicated that there will be any principal roads resurfacing funding for the borough in 2022/23. Any subsequent funding that may be received from TfL in 2022/23 will be added to the Council's capital investment into Haringey's roads.

8.6 The investment will involve resurfacing the carriageway in 17 roads and the relaying of 23 footways throughout the borough in 2022/23. Included within this investment is £1.969m which is allocated to support reactive maintenance issues, ad hoc asset improvements, responsive works and small-scale highways maintenance schemes. These maintenance works include the repair of potholes and fixing footway trip hazards.

8.7 The highways resurfacing and footway proposals were prioritised using the:

- current Highways Asset Management Plan; and
- Highway Safety Inspection Manual

8.8 Roads were individually scored based on:

- Engineer's visual survey
- Network hierarchy
- Classification of the road
- Public and Members' requests
- Whether on a bus route and/or cycle route and/or institutions (e.g. school) on the road.

8.9 The individual scores were summated to give an overall score for each road. Those roads that scored the highest were considered priority for resurfacing and footway works.

8.10 The current Highways Asset Management Plan is being updated. There is an ongoing visual inspection of all the borough's highways network, to be completed by April 2022. This assessment, when completed, will be used as the basis for prioritising the network's condition for future major footways and resurfacing maintenance works. The roads listed in Appendix 1: Tables 1 to 6 have been assessed by engineers in the Highways and Traffic Team as requiring works in 2022/23.

8.11 A few of the footway and carriageway maintenance proposals also include those which were to be implemented in 2021/22. Due to several reasons, including some budget constraints and resource difficulties due to the Covid-19 pandemic, these works weren't carried out.

8.12 Elected Members were invited to put forward their priorities for investment in their respective wards. Those responses, alongside requests by residents, were assessed in line with the methodology set out above in paragraphs 8.7 and 8.8. The sections of carriageways and footways that are in the worst condition were selected for necessary improvement works, rather than the

entire length of a carriageway or footway, or the footways on both sides of any road. The Elected Members' requests that form part of the investment programme are shown in italicised text in Tables 3, 4, 5 and 6 of Appendix 1.

8.13 Additional capital growth investment in 2022/23 for carriageway, structure and non-illuminated street furniture infrastructure assets is as follows:

- £1,950k resurfacing B, C and unclassified roads
- £1,000k principal road maintenance
- £280k structures
- £200k non-illuminated street furniture

An additional £355k for gully maintenance is addressed in the Flood Water Management Investment Plan for 2022/23 report, and an additional £200k for illuminated street furniture and festive lighting is addressed in Section 9 of this report.

Resurfacing

8.14 Additional capital growth investment will be used to resurface more roads as are listed in Appendix 1: Tables 2, 3 & 5. These roads were assessed and prioritised as requiring maintenance works.

8.15 It should be noted that, as in 2021/22, the Council does not expect any Transport for London funding for principal road resurfacing works in 2022/23.

Highway structures (e.g. bridges)

8.16 Haringey's structures are generally maintained on an 'as needed' basis and at close to the point of potential failure. These works are funded via specific capital allocation from grant funding through LoBEG (London Bridges Engineers Group), or from Haringey Council. Costs are variable and generally in the region of millions.

8.17 An increasing number of structures are entering into a state of disrepair. They require preventative maintenance to extend the lifespan of these structures and greatly reduce the risk of significant disruption in the future.

8.18 A programme of structural surveys and minor reactive / preventative maintenance is proposed to extend the life of the assets before major inventions are required. The proposed growth funding budget of £280k (as shown in Appendix 1: Table 7) will be used to carry out these repairs.

Non-Illuminated Street Furniture

8.19 The proposed growth funding budget of £200k (as shown in Appendix 1: Table 7) will be used for the essential replacement and repair of highways street assets such as bollards, benches, signs, sign posts and planters.

9. Street lighting

Summary and background

9.1 Investment in street lighting and illuminated street furniture assets on the highway network is set out in Appendix 2.

9.2 The Council is responsible for maintaining approximately 14,800 street lighting columns across the borough highway network. The Haringey lighting policy is currently being developed which will set out all the requirements relating to design, specification, installation and commissioning of public and road lighting in the borough.

9.3 Street lighting also plays a key role in reducing crime and fear of crime. It is recognised from the recent resident perception survey that residents, in particular women, feel less safe at night. Lighting designers will therefore evaluate risk to determine the lighting class for the roads to be refurbished/relit. The lighting calculations will be dependent upon the levels set in the lighting policy, which will include the local area knowledge and night-time crime statistics.

9.4 It is recognised that there are inconsistent levels of street lighting across the borough and variations along stretches of individual roads. This variability in lighting will be addressed and corrective steps taken to ensure a far greater level of consistency.

9.5 The street lighting central management system (CMS) which is due to go live, will allow the Council to detect and rectify faulty lighting more quickly. This will reduce the potential for and duration of unplanned areas of darkness (which undoubtedly adds to the concerns around safety at night). The CMS will also enable an increase in lighting levels in crime hotspots or during events where the risk of crime may be more prevalent.

9.6 The current approved annual allocation for lighting is £1.3m. This is modelled on a replacement cycle of 50 years (the expected lifespan of a steel lighting column). The efficiencies gained through the conversion to LED, and the implementation of a central management system will offset the cost of interim faults, repairs and damage until 2026/27.

9.7 At present, around 15% of the street lighting columns in the borough are at or close to their end-of-life expectancy. The Institution of Lighting Professionals reinforces the principle of considering lighting column residual life as good[3] asset management, in line with the requirements of the Well-Managed Highway Infrastructure national code of practice. Haringey's lighting stock is monitored by visual inspections and further assessed via annual electrical and structural testing programmes (required to ascertain the levels of corrosion and deterioration).

9.8 The street lighting column maintenance programme will fund the replacement of any priority columns identified through the inspections and testing, as well as supporting a rolling programme of street-by-street replacement of the oldest

[3] Guidance Note 22 (Asset Management Toolkit: Minor Structures)

stock. This approach mitigates against the risk of impromptu lighting column collapse.

Festive lighting and responsive improvements

9.9 The Festive Lighting programme supports the testing, replacing, installation, and maintenance of seasonal lighting every year.

9.10 Additionally, £0.225m (revenue) has been allocated to undertake responsive improvements to street lighting and other illuminated street furniture throughout the year on a needs-led basis.

9.11 Regeneration, new developments and transport projects approved through separate investment programmes will also include elements of street lighting and illuminated street furniture and these works will complement the Street Lighting Investment Programme.

Additional growth lighting

9.12 Additional proposed capital growth investment in 2022/23 is for:

- £150k illuminated signs and bollards
- £50k Festive Lighting

10. Traffic schemes

10.6 Investment in traffic schemes is set out in Appendix 3.

10.7 Investment in traffic schemes[4] is broken down into the following programmes:

- Council / grant funded public realm projects
- Developer-funded
- Walking schemes
- Bus-related measures

Council / grant funded public realm projects (for Information only)

10.8 The planned investment is detailed in Appendix 3: Table 1. This lists the projects at various stages of development, some currently are under way whilst others are to commence in 2022/23.

Developer-funded projects (for information only)

10.9 The planned investment is detailed in Appendix 3: Table 2

10.10 Funding is provided by developers to deal with site-specific mitigation of the impact of their development under Section 106 of the Town and Country Planning Act 1990 and Section 278 of the Highways Act 1980. This may include

[4] Note. This report excludes the following programme areas that – whilst they may impact upon traffic - are approved elsewhere: road danger reduction, parking, cycling, School Streets and Low Traffic Neighbourhoods

contribution towards parking controls, walking and cycling measures, carriageway and footway enhancement measures.

10.11 These modifications are identified and funded by the developer as part of the planning process. Additional projects will be identified by the Council's Transport Planning Team throughout the year and delivered by the Highways and Traffic Team. The timeframe for delivery is led by the developer's programme and projects may therefore be brought forward or delayed. Funding for these projects are not time constrained.

Walking schemes

10.12 The planned investment is detailed in Appendix 3: Table 3

10.13 In December 2020, Cabinet approved £5.1 million for 'street space projects' from the Strategic Community Infrastructure Levy. This funding has been programmed for spend across a three-year programme, resulting in £1.7m per year for walking and cycling projects.

10.14 As set out in Appendix 3 Table 3, the Council will invest £0.200m (annually for three years) from this SCIL funding specifically for walking projects. This will include investment in crossing points and pavement widening in the vicinity of schools, wayfinding, and improvements to accessibility and permeability to town centres and green spaces

10.15 In addition, the Council has sought an additional £0.150m funding from Transport for London. However, it is important to note that the TfL funding has not yet been confirmed.

Bus-related measures

10.16 The planned investment is detailed in Appendix 3: Table 4

10.17 Improving reliability is essential to increasing bus usage and passenger satisfaction and therefore confidence in the service necessary to encourage a shift from private car use. Officers will continue to work with TfL and operators to identify bus "pinch points" reducing congestion and delays that impact on public transport services. These measures will deliver benefits to passengers allowing buses to move more freely.

10.18 The Council has sought £0.346m funding from Transport for London for bus related measures. However, it is important to note that the TfL funding has not yet been confirmed.

11 Design, Consultation and Engagement

11.1 Officers are committed to ensuring that local communities are involved in identifying and developing, where viable by way of co-production, transport and highways schemes in their neighbourhoods.

11.2 The schemes identified within this report will initially be developed by officers in accordance with national, regional and local standards and best practice. This will include, where applicable, the input from Ward Councillors, key stakeholder groups and residents' associations at consultation stages.

11.3 The expected level of consultation / notification for schemes is set out in the attached Appendix 4. Methods of communication typically used by the Council (such as public exhibitions or meetings) will be subject to national guidance in relation to Covid restrictions.

11.4 The Council will continue to improve the quality of information available to residents and other interested parties on highways schemes planned for their areas. This will involve the information being made readily available on the Council's website, as well as through works signing, advanced warning signs and information letters. This will help to minimise any disruption and inconvenience associated with these works.

12 Contribution to strategic outcomes

12.1 The HSLIP supports two key Themes within the Borough Plan 2019-2023:

12.2 People Theme: A Haringey where strong families, sturdy networks and resilient communities nurture all residents to live well and achieve their potential. The projects and programmes in the HSLIP will contribute to specific outcomes within this Theme, by improving road safety, encouraging active travel and modal shift to improve air quality.

12.3 Place Theme: A place with robust, resilient & connected communities where people can lead active and healthy lives in an environment that is safe, clean and green. The projects and programmes in the HSLIP will contribute to specific outcomes within this Theme, by improving the public realm and road network condition, reducing road traffic collisions, while improving accessibility for all road users, in particular pedestrians and cyclists and motorcyclists.

12.4 London-wide contribution to a healthier London - The Mayor of London's Transport Strategy and Local Implementation Plan 3 guidance was published in 2018. The final LIP3 was approved by TfL in June 2019.

12.5 The Council's Local Plan - Haringey's Local Plan sets out the Council's key planning policies, which include a focus on sustainable transport.

12.6 Transport Strategy - the Council's 2018 Transport Strategy sets out the strategic vision, objectives and priorities on the future of transport in Haringey over the next 10 years. The Strategy outlines the role that HSLIP projects and programmes play in achieving this.

12.7 Haringey's Climate Change Action Plan sets out how the borough will become net zero carbon by 2041. The completion and expansion of the LED roll-out and the introduction of the CMS will positively impact upon an initial reduction in

energy consumption and associated carbon emissions. However, further reductions in energy consumed and carbon emitted can be achieved by more critically assessing illumination levels and the hours at which they operate.

13 Statutory Officers' comments (Director of Finance (procurement), Head of Legal and Governance, Equalities)

Finance

13.1 This report sets out the expenditure for the 2022/23 Highways and Street Lighting Investment Plan detailing all of the highways-related activities and the various funding streams that have been confirmed within the Council's approved Capital Programme.

The table below outlines the funding allocation of the Investment Plan for 2022/23:

2022/23 Capital Investment Plan	LBH CP	SCIL	Total Confirmed Funding	TFL Funding TBC	Total
Highways and Street Lighting Investment Plan	**£'000**	**£'000**	**£'000**	**£'000**	**£'000**
Calssified & Unclassified Roads	1.100		1.100		**1.100**
Footways Planned Mtce	1.700		1.700		**1.700**
Short section footway, carriageway & highways marginal land maintenance	0.323		0.323		**0.323**
Responsive Mtce	0.750		0.750		**0.750**
Investment in Pavements' and ad hoc asset improvements	0.896		0.896		**0.896**
Principal Roads Major Mtce	1.000		1.000		**1.000**
Classified & Unclassified Roads	1.950		1.950		**1.950**
Various structure repairs to bridges, waterproofing, repairs, surveys.	0.280		0.280		**0.280**
Non-illuminated Street Furniture	0.200		0.200		**0.200**
Other street lighting works	0.200		0.200		**0.200**
Virement to Gully Mtce (FWMIP)	0.355		0.355		**0.355**
	8.754		**8.754**		**8.754**
Street Lighting					
Column and LED lantern replacement	0.825		0.825		**0.825**
Festive lighting	0.025		0.025		**0.025**
Electrical and structural testing	0.115		0.115		**0.115**
CMS upgrades to traffic signs	0.085		0.085		**0.085**
Response maintenance	0.225		0.225		**0.225**
Lantern maintenance	0.025		0.025		**0.025**
	1.300		**1.300**		**1.300**
Walking schemes					
Walking routes to town centres and green spaces				0.100	**0.100**
Walking route signage strategy				0.050	**0.050**
Walking schemes		0.200	0.200		**0.200**
		0.200	**0.200**	**0.150**	**0.350**

Legal

13.2 The Head of Legal and Governance has been consulted on the preparation of this report and comments as follows.

13.3 The Council, as a highway authority, has a statutory obligation to maintain the public highways it is responsible for in the Council's borough and may carry out any work for the improvement of those highways.

13.4 This report seeks approval for the programme of highway works on the public highway for the financial year 2022/23 which is a decision that Cabinet can take in accordance with the Council's Constitution.

Procurement

13.5 Strategic Procurement notes the contents of this report and confirms there are no regulatory procurement related matters preventing the Council from approving the recommendations stated in Section 3 above.

Equality

13.6 The Council has a Public Sector Equality Duty under the Equality Act (2010) to have due regard to the need to:

- Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act
- Advance equality of opportunity between people who share those protected characteristics and people who do not
- Foster good relations between people who share those characteristics and people who do not.

13.7 The three parts of the Duty applies to the following protected characteristics: age, disability, gender reassignment, pregnancy/maternity, race, religion/faith, sex and sexual orientation. Marriage and civil partnership status applies to the first part of the Duty.

13.8 The EqIA identified several temporary negative impacts that may occur on groups with protected characteristics because of the implementation of the delivery plan, and specifically while works are being carried out.

13.9 Age (Older people) – disruptions to footway access may create a higher risk of trips and falls.

13.10 Age (Younger people) - there is a risk that young people are required to leave safe routes to and from home, which may lead them to take alternative routes that put them in harm's way, either through needing to use less-safe crossings, or taking routes that may put them in danger due to local community/gang tensions.

13.11 Disability – Similarly, disruptions to footway access could reduce accessibility and mobility for disabled people who are more reliant on consistent and level routes and may struggle to find alternatives.

13.12 Race – disruption to commuter routes may have a negative impact on those residents in low-paid roles who are at greater risk of sanction for arriving late to work. Given that there is a high proportion of BAME residents who occupy lower paid roles and where there is less scope to work from home, there is a potential negative impact of these works on this group. This would particularly be for those schemes in the east of the borough where residents earn 14% lower than those in the west of the borough.

13.13 The key beneficial impacts of the proposals for investment on the network include:

- Improved access to facilities will benefit all Haringey residents and visitors, but some protected groups such as older people and children will benefit disproportionately.
- Safer roads, less congestion and reduced levels of pollution are likely to benefit people in some of the protected groups, such as older and/or disabled people with respiratory illnesses more than for the general population.
- Improved light colour rendering through installation of LED lights which will benefit all Haringey residents and visitors by potentially improving perceptions of safety in the borough. This is likely to disproportionately benefit some protected groups who are known to feel less safe in the borough at night, including women, young adults, older people, and disabled people (particularly those who are visually impaired).
- The potential longer-term reduction of crime rates by encouraging social cohesion and community surveillance that may deter criminal behaviour. While this may positively impact on all residents, this has the potential to make a particular difference in areas such as the East of the borough where there are relatively high levels of crime and anti-social behaviour. As these are areas which also have higher numbers of low-income households, among whom BAME residents are overrepresented, individuals from these demographic groups may benefit disproportionately from lighting improvements.
- Greater use of the network by cycling or walking which will be well-lit, which is likely to improve the health and wellbeing of all residents and visitors but particularly for groups with protected characteristics who are known to experience health inequalities. This beneficial impact is likely to be amplified in the wake of lockdown restrictions and resulting increased numbers of people exercising outdoors, which improvements to the borough's lighting infrastructure should make easier and safer.
- Reduced levels of pollution by greater use of walkways and cycling networks which are likely to benefit people in some of the protected groups, such as older and/or disabled people with respiratory illnesses more than for the general population.

13.14 Measures that increase walking and cycling through improved safety and awareness aim to improve the health and wellbeing of groups with protected characteristics who are known to experience health inequalities.

13.15 The traffic, walking and bus proposals include measures to undertake monitoring in order to collect data for all groups regarding modal share and travel habits. This will help the Council to identify and address any inequalities.

13.16 The communication and engagement measures set out in the Investment Plan for 2022/23 will increase awareness of works and minimise disruption caused at implementation stages. This will allow residents adequate time to make alternative arrangements, and any necessary adjustments will be made on a scheme-by-scheme basis in order to ensure continued access for affected groups with protected characteristics including disabled and elderly residents. Moreover, to minimise these impacts, schemes will be individually planned and delivered. Mitigations will include planning and undertaking some works at off-peak times when pavements are less likely to be in use, reducing the impact of the works on accessibility for all.

13.17 It is considered that the long-term positive equalities impact of the lighting investment plan outweighs the potential temporary negative impacts during works to implement the plan.

14 Use of Appendices

Appendix 1 – Highway Asset Investment Plan
Appendix 2 – Street Lighting Investment Plan
Appendix 3 – Traffic Scheme Investment Plan
Appendix 4 – Consultation methods

15 Local Government (Access to Information) Act 1985

- Borough Plan 2019-2023
- Transport Strategy 2018
- Draft Walking and Cycling Action Plan
- Cabinet report 7/12/21: 2022-23 Budget and 2022-2027 Medium Term Financial Strategy Report
- Local Plan
- Street Lighting Policy Document
- Highway Asset Investment Plan

Appendix 1 – Highway Asset Investment Plan 2022/23

Table 1: Carriageway & footway summary capital programme

Scheme Name / Location	Ward	Allocation 2022/23 (£k)
Principal road maintenance	Various	0
Classified and unclassified roads resurfacing (Table 4)	Various	1,100
Footway planned maintenance (Table 6)	Various	1,700
Short section footway, carriageway & highways marginal land maintenance	Various	323
Responsive maintenance	Various	750
Investment in Pavements' and ad hoc asset improvements	Various	896
Total		**4,769**

Table 2: Carriageway major maintenance summary capital growth budget proposals

Scheme Name / Location	Ward	Allocation 2022/23 (£k)
Principal roads major maintenance (Table 3)	Various	1,000
Classified and unclassified roads resurfacing (Table 5)	Various	1,950
Total		**2,950**

Table 3: Principal road major maintenance with capital growth budget

Road	Ward	Estimated Cost (£k)
Green Lanes, N4	Haringey	62
High Road, N17	Northumberland	105
High Road, N22	Woodside/Bounds Green	151
Highgate High Street/Highgate Hill, N6	Highgate	136
Lordship Lane, N17	White Hart Lane/West Green/Bruce Grove	180
Muswell Hill, N10	Muswell Hill	73
Tottenham Lane, N8	Hornsey	173
West Green Road, N15	St Ann's/Tottenham Green	50
Westbury Avenue, N22	West Green	70
Total		**1,000**

N.B. Roads identified by ward councillors for intervention are in italics above.

Appendix 1 – Highway Asset Investment Plan 2022/23

Table 4: Classified and unclassified roads resurfacing proposals

Road	Ward	Estimated Cost (£k)
Alexandra Park Road, N10	Alexandra	78.0
Aylmer Parade, N2	Fortis Green	18.5
Barrenger Road, N10	Fortis Green	78.0
Broadwater Road, N17	Bruce Grove	55.0
Coppetts Road, N10	Fortis Green	57.0
Durnsford Road, N11	Bounds Green & Alexandra	148.0
Fortis Green Avenue, N2	Fortis Green	44.5
Lancaster Road, N4	Stroud Green	85.0
Lansdown Road, N17	Tottenham Hale	120.0
Lorne Road, N4	Stroud Green	46.0
Muswell Hill Road, N6	Highgate	58.0
Muswell Road, N10	Fortis Green	18.0
Park Avenue South, N8	Muswell Hill	82.0
The Bank, N6	Highgate	15.0
Winchester Place, N6	Highgate	25.5
Woodland Rise, N10	Muswell Hill	82.5
Woodside Avenue, N10	Fortis Green	89.0
Total		**1,100.0**

N.B. Roads identified by ward councillors for intervention are in italics above.

Table 5: Classified and unclassified roads resurfacing proposals with capital growth budget

Road	Ward	Estimated Cost (£k)
Gladesmore Road, N15	Seven Sisters	81.0
Dowsett Road, N17	Tottenham Hale	50.5
Middle Lane, N8	Crouch End	63.5
Alroy Road, N4	Harringay	15.5

Appendix 1 – Highway Asset Investment Plan 2022/23

Road	Ward	Estimated Cost (£k)
Ivatt Way, N22	West Green	9.5
Weston Park, N8	Hornsey	56.0
Waldegrave Road, N22	Noel Park	27.0
Grosvenor Road, N10	Alexandra	39.0
Hurst Avenue, N6	Crouch End	80.0
South Grove, N15	St Ann's	45.0
Woodstock Road, N4	Stroud Green	22.0
Barnard Hill, N10	Alexandra	27.0
Coolhurst Road, N8	Crouch End	74.0
Glenwood Road, N15	St Ann's	47.5
Windermere Road, N10	Hornsey	63.5
Coniston Road, N10	Alexandra	36.5
Oak Avenue, N8	Hornsey	14.5
Cranbrook Road, N22	Woodside	40.5
Avenue Road, N15	St Ann's	42.5
Downhills Way, N17	West Green	29.5
Pemberton Road, N8	Harringay	79.5
Warwick Road, N4	St Ann's	58.5
Woodlands Park Road, N15	St Ann's	61.0
Muswell Avenue, N10	Alexandra	71.0
Rostrevor Road, N15	Seven Sisters	41.0
Thirlmere Road, N10	Highgate	47.5
Victoria Road, N4	Stroud Green	16.0
Halefield Road, N17	Tottenham Hale	28.0
Holcombe Road, N17	Tottenham Hale	22.0

Appendix 1 – Highway Asset Investment Plan 2022/23

Road	Ward	Estimated Cost (£k)
Albert Road, N4	Stroud Green	45.0
Moselle Avenue, N22	Noel Park	42.0
Clarendon Road, N15	St Ann's	37.0
Stormont Road, N6	Highgate	41.0
Florence Road, N4	Stroud Green	37.0
Ridge Road, N8	Stroud Green	28.5
Sherringham Avenue, N17	Tottenham Hale	52.0
Southwood Lane, N6	Highgate	53.0
St Albans Crescent, N22	Woodside	37.0
Kimberley Road, N17	Tottenham Hale	34.5
Reform Row, N17	Tottenham Hale	22.0
Albion Road, N17	Tottenham Hale	12.0
Cornwall Road, N15	St Ann's	52.0
Brunswick Road, N15	Tottenham Green	13.0
Greig Close, N8	Hornsey	13.5
Wembury Mews, N8	Highgate	5.0
Keynes Close, N2	Fortis Green	15.5
Cemetery Road, N17	Northumberland Park	14.0
South Close, N6	Highgate	21.5
Sylvan Avenue, N22	Woodside	78.0
Broadlands Close, N6	Highgate	7.5
Total		**1,950**

N.B. Roads identified by ward councillors for intervention are in italics above.

Appendix 1 – Highway Asset Investment Plan 2022/23

Table 6: Footway planned maintenance works

Roads	Ward	Estimated Cost (£k)
West Green Road, N15	St Ann's	46
Lordship Lane, N17	Bruce Grove	55
Tottenham Lane, N8	Hornsey	65
Turnpike Lane, N15	Noel Park	30
Belmont Road, N17	West Green	94
Middle Lane, N8	Hornsey	89
North Hill, N6	Highgate	76
North Hill, N6	Highgate	65
Priory Gardens, N6	Crouch End	32
Hampstead Lane, N6	Highgate	76
Denton Road, N8	Hornsey	88
Hampstead Lane, N6	Highgate	71
Willoughby Lane, N17	Northumberland Park	59
Shepherds Hill, N6	Crouch End	130
Downhills Way, N17	West Green	70
Crescent Road, N8	Crouch End	66
Willoughby Lane (cul-de-sac), N17	Northumberland Park	44
Park Avenue South, N8	Crouch End	140
Weston Park, N8	Crouch End	31
Church Road, N6	Highgate	64
Stanhope Road, N6	Crouch End	115
Cranbourne Road, N10	Alexandra	69
Cavendish Road, N4	Harringay	80
Harvey Road, N8	Hornsey	45
TOTAL		**1,700**

N.B. Footways identified by ward councillors for intervention are in italics above.

Appendix 1 – Highway Asset Investment Plan 2022/23

Table 7: Other assets works with capital growth budgets

Scheme Name / Location	Ward	Allocation (£k)
Various structure repairs to bridges, waterproofing, repairs, surveys.	Various	280
Gully maintenance (referenced in the Flood Water Management Investment Plan for 2022/23 report)	Various	355
Non-illuminated street furniture	Various	200
Other street lighting works (as shown in Table 2 of Appendix 2)	Various	200
Total		1035

Appendix 2 - Street Lighting Investment Plan 2022/23

Table 1: Street lighting summary capital programme

Scheme Name / Location	Ward	Allocation (£k)
Column and LED lantern replacement	Various	825
Festive lighting	Various	25
Electrical and structural testing	Various	115
CMS upgrades to traffic signs	Various	85
Response maintenance	Various	225
Lantern maintenance	Various	25
Total		**1,300**

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Table 2: Other street lighting works with capital growth budgets

Scheme Name / Location	Ward	Allocation (k)
Festive lighting	Various	50
Illuminated Signs and Bollards	Various	150
Total		**200**

Table 3: Column replacement (including lanterns) 2022/23

Road Name	Ward	Allocation (£k)
Barnard Hill	Alexandra	25
Elms Avenue	Alexandra	35
Bedford Road	Crouch End	20
Berkeley Road	Crouch End	25
Birchington Road	Crouch End	25
Bryanstone Road	Crouch End	20
Dashwood Road	Crouch End	25
Edison Road	Crouch End	20
Fairfield Road	Crouch End	20
Gladwell Road	Crouch End	15
Priory Gardens	Crouch End	35
Sandringham Gardens	Crouch End	15
Womersley Road	Crouch End	25
Burlington Road	Fortis Green	15
Coldfall Avenue	Fortis Green	20
Eastwood Road	Fortis Green	15
Fordington Road	Fortis Green	75
Lanchester Road	Fortis Green	50
Pages Hill	Fortis Green	15
Wellfield Avenue	Fortis Green	10
Bishops Road	Highgate	20
Bloomfield Road	Highgate	15

Appendix 2 - Street Lighting Investment Plan 2022/23

Road Name	Ward	Allocation (£k)
Grange Road	Highgate	15
Hillside Gardens	Highgate	15
Holmesdale Road	Highgate	25
Hornsey Lane	Highgate	20
Langdon Park Road	Highgate	25
Milton Avenue	Highgate	15
Milton Road	Highgate	25
North Grove	Highgate	15
North Hill Avenue	Highgate	15
Orchard Road	Highgate	15
Talbot Road	Highgate	40
Ferry Lane	Tottenham Hale	60
Capital growth schemes columns	Various to be identified	200
Total		**825**

Appendix 3 – Traffic Investment Plan 2022/23

Table 1: Council / grant funded (for information only)

Scheme Name/Location	Ward
The Bank Retaining Wall	Highgate
Highgate School Cemetery Wall	Highgate
Broad Lane Public Realm	South Tottenham
Tottenham Hale Public Realm Design Phases 3 & 4	Tottenham Hale
Tottenham Hale Public Realm Implementation Phase 1	Tottenham Hale
Tottenham Hale Public Realm Implementation Phase 2	Tottenham Hale
Tottenham Hale Public Realm Implementation Phase 3	Tottenham Hale
Pages Green Public Realm	South Tottenham
Mayes Road Phase 2 Public Realm	Noel Park
Penstock Tunnel Public Realm	Noel Park, Alexandra Place
District Energy Network THALE	Tottenham Hale
District Energy Network Wood Green	Noel Park
Fairbanks Green Public Realm	Tottenham Hale
Tottenham Hale Construction Logistics.	Tottenham Hale
Tottenham Hale Section 278 Works Agreement	Tottenham Hale
Fairbanks Road carriageway construction.	Tottenham Hale
Ferry Lane Bridge Public Realm	Tottenham Hale
Turnpike Lane Shop Fronts and Public Realm	Harringay
Park View Subway Public Realm	Northumberland Park
Barratts Gardens Public Realm and School Street Project	Noel Park
Northumberland Park Station Public Realm	Northumberland Park
Pride in Bruce Grove Public Realm	Bruce Grove
Parkland Walk bridges project	Highgate, Crouch End, Muswell Hill, Stroud Green

Table 2: Developer funded (for information only)

Scheme/Location	Ward
Cross Lane Public Realm	Hornsey
Chocolate Factory Public Realm	Noel Park
Clarendon Road Phase 2 Public Realm	Noel Park
673 Lordship Lane N22	Noel Park
17-34 Pretoria Rd N17	Northumberland Park
423-435 West Green Rd N15	St Ann's
Hornsey Reuse & Recycling Centre, High Rd N8	Hornsey
Zenith House, 69 Lawrence Rd N15	Tottenham Green
Mono House, 50-56 Lawrence Rd N15	Tottenham Green
500 White Hart Lane N17	White Hart Lane
550 White Hart Lane N17	White Hart Lane
555 White Hart Lane N17	White Hart Lane
Hornsey Town Hall N8	Crouch End
590-598 Green Lanes N22	Harringay
Marsh Lane footpath N17	Tottenham Hale

Appendix 3 – Traffic Investment Plan 2022/23

Table 3: Walking schemes

Scheme Name	Ward	Streetspace Plan projects (SCIL funding agreed by Cabinet December 2020) (£k)	Potential TfL funding (LIP) (£k)	Grand total (subject to TfL) (£k)
Walking routes to town centres and green spaces	Various		100	100
Walking route signage strategy	TBC		50	50
Walking schemes	Various	200		200
Total		**200**	**150**	**350**

Table 4: Bus-related schemes (bus corridors where journey time delay is being experienced)

Project Name	Project description	Potential TfL funding (LIP)	Project scope
REL 398	High Road southbound side opposite Brampton Park Rd	£38k	Design only
REL 403	High Road just to south of Bounds Green Lane	£38k	Design only
REL 451	Lansdown Road junction with Shelbourne Road	£200k	Design and build
REL 861	A1010 junction with Brantwood Road to borough boundary	£30k	Design only
A1010 Bus Lane Review	Bus lane review on the A1010 with Enfield	£20k	Design only
Priory Road Bus Study	Priory Road from Middle Lane to High Road bus priority study	£20k	Study
Total		£346k	

Appendix 4: Consultation methods

The various highways and traffic schemes developed through this works plan will be the subject of further consultation/ notification. The level of consultation/ notification will depend on the impact of the scheme on the local community. The three consultation/notification types are:

- Notification of works (All works) – residents and businesses of affected roads will be notified by letter drop on approval of the Highways Investment Plan. In addition, they will be notified by letter drop and any other appropriate media 3 weeks in advance of work commencing.

- Statutory notification **-** the public will be notified of the Council's intention regarding proposals through advertisements placed in the local press and on site. Residents and businesses of the affected roads will also be notified by letter drop. The notification will provide full details of the scheme and a commencement date for construction. Resident, businesses and other interested parties will have the opportunity to approve/object to these proposals and these considerations will be taken into account before implementing the scheme.

- Full public consultation – any high-profile schemes will be subject to full consultation which will include public events (where possible) and formal consultation questionnaires.

The Table below sets out the consultation process by scheme.

Scheme Name / Location	**Consultation Type**		
	Notification	Statutory Notification	Full Consultation
Footway and Carriageway Improvements	✓	✓ Where applicable	
Highway structures	✓		
Other Highways Assets	✓		
Street lighting	✓ Where applicable		
Traffic schemes		✓	

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