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City of Westminster

Committee Agenda

Title:

Finance, Smart City and City Management Policy and Scrutiny Committee

Porchester Hall, Porchester Road, London W2 5HS

Meeting Date:

Thursday 30th September, 2021

Time:

6.30 pm

Venue:

Members:

Councillors:

lan Adams Lorraine Dean Paul Dimoldenberg Adam Hug Pancho Lewis Gotz Mohindra (Chairman) Eoghain Murphy Emily Payne

This meeting will be live streamed and recorded. To access the recording after the meeting, please revisit the link.

Link to live meeting

Members of the public and press are welcome to attend the meeting and listen to the discussion of Part I of the Agenda.

Admission to Porchester Hall will be on a first come, first served basis as seating is limited.

If you require any further information, please contact the Committee Officer, Artemis Kassi.

akassi@westminster.gov.uk Corporate Website: <u>www.westminster.gov.uk</u> **Note for Members:** Members are reminded that Officer contacts are shown at the end of each report and Members are welcome to raise questions in advance of the meeting. With regard to item 2, guidance on declarations of interests is included in the Code of Governance; if Members and Officers have any particular questions, they should contact the Head of Committee and Governance Services in advance of the meeting please.

AGENDA

PART 1 (IN PUBLIC)

1. MEMBERSHIP

To note any changes in the membership.

2. DECLARATIONS OF INTEREST

To receive any declarations by Members and Officers of the existence and nature of any pecuniary interests or any other significant interest in matters on this agenda.

3. MINUTES

The minutes of the meeting on 30th June 2021 will be reviewed at the Committee's meeting on 19th October 2021.

4.	WESTMINSTER CITY COUNCIL: INTERIM SECTION 19 REPORT	(Pages 5 - 36)
	To receive and consider the Interim Section 19 Flooding Report	

produced in line with the Council's statutory role as the Lead Local Flood Authority for the City of Westminster (Flood and Water Management Act 2010).

5.	THAMES WATER INTERIM BRIEFING REPORT	(Pages 37 - 44)
	To receive and consider an interim report from Thames Water concerning the flooding incidents of July 2021 in the City of Westminster.	

6. LONDON FIRE BRIGADE BRIEFING REPORT

To receive a briefing report from the London Fire Brigade about the events of 12 July 2021.

7. WORK PROGRAMME

To consider the Committee's work programme.

PLEASE NOTE:

In a scrutiny meeting, questions are not taken from the Public Gallery during the meeting. However, at this extraordinary meeting, one ward councillor from each of the affected wards will be invited to make a deputation. Ward councillors have also been invited to make written representations to the Committee on behalf of their residents.

Audience members may not address the Committee directly during the meeting. Notes cannot be passed from the Public Gallery.

However, any questions which affected residents wish to raise at the meeting should be sent to <u>scrutiny2@westminster.gov.uk</u> by 12PM on Friday 24 September 2021.

Stuart Love Chief Executive 23 September 2021 (Pages 45 - 50)

(Pages 51 - 54)

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Agenda Item 4 **AGENDA ITEM No:**



Finance, Smart City and City of Westminster City Management Policy and Scrutiny Committee

Report Author and Contact Details:	Phil Robson probson@westminster.gov.uk
Policy Context:	Local Flood Risk Management Strategy 2017-2022
Wards Involved:	All
Cabinet Member Portfolio	City Management
Report of:	Raj Mistry
Title:	Interim Section 19 Flood Report (12 th July 2021)
Classification:	General Release
Date:	30 th September 2021

1. **Executive Summary**

Consideration of the Interim Section 19 Flooding Report produced in the council's role as Lead Local Flood Authority for Westminster.

2. Key Matters for the Committee's Consideration

This report is an interim report while we await the outcome of Thames Water's independent review which is anticipated to take over 6 months.

3. Background

Overview

As Highway Authority Westminster City Council (WCC) is responsible for highways drainage in Westminster. This includes the drain grates and pots known as 'gullies' in its streets. The gullies collect water at street level and send it into Thames Water's sewer network. Thames Water's responsibility begins, and the council's ends, at the point the gully pipe connects with the sewer pipe.

Westminster also act as Lead Local Flood Authority for the area. Section 19 (S19) of the Flood and Water Management Act (FWMA) 2010 places a statutory duty on LLFA'S to investigate flooding incidents in their area. Following exceptional rainfall on 12th July 2021, multiple wards in north Westminster

suffered severe flooding which triggered a S19 Report. We were also aware of a further flood event of the 25th July and committed to investigating if there were any different contributing factors to this event.

Westminster engaged WSP to produce this report on their behalf. Terms of reference for this report can be found in Appendix A and were published online in August. The purpose of the investigation is to understand how the incident occurred and what functions were exercised by Risk Management Authorities (RMAs) in response to the flood.

Thames Water independent review

Thames Water are undertaking workshops with LLFAs in September 2021 and an independent review of the 12th July flood event; their findings and recommendations will inform the final version of this report. The date of the independent review is not known at the time of writing. However, it is anticipated the review will take over 6 months.

There is a steering group for this independent review which the GLA and London Councils have been invited to sit on. WCC have written to Thames Water to request that all the Lead Local Flood Authorities impacted by the event including Westminster are also invited to sit on this group.

Interim Report

As a key RMA the information that Thames Water supply will form an important part of the final Section 19 report. With the Thames Water timescales in mind the council has taken the decision to publish an interim report based on the information that we have been able to gather to date. This report can be found in Appendix B.

It is important to emphasise that this interim report is a live document and will be subject to further iterations as information is gathered particularly from Thames Water.

Gully Cleansing

As Highway Authority the council's responsibility is to get surface water to the sewer system as efficiently as possible. This is made possible by regular maintenance of the highway drainage network. WCC has adopted a risk-based approach to cleaning its gullies, this means silt levels in gullies are recorded before cleansing. Based on the silt level trends a cleaning regime is developed which aims to optimise the cleansing of gullies on a street. The council aim to clean gullies when the average silt levels are between 60% and 70% full. Figure 4 in the interim report shows an illustration of a gully pot with associated silt levels. This shows that anything with silt levels at 100% or under would be below the outlet and would still allow water to run away and into the Thames Water system.

The initial review found that the highway drainage network was working effectively at the time of the event with the average silt levels within the council's optimum target of 70% full in the streets affected by the flood event.

There are a number of gullies that our contractors were unable to access on their routine cleansing visit due to parked cars/ traffic management issues. These have either been revisited or have been scheduled for a revisit with carlifter resource/ appropriate traffic management where necessary.

In January 2021 the council commenced a trial on the use of gully sensors to give us real-time information on silt levels. Further rollout of these and linking them to Met Office weather warnings will enable us to clear gullies in vulnerable areas ahead of predicted heavy rainfall events.

Initial Findings

Data from rain gauges suggest that on the 12th July around a month's worth of rain fell within a 24-hour period with much of this falling within a 3-hour period in the afternoon. Consequently, highway drains and the local sewer network were unable to cope with the intense and high volume of rainfall.

The highway drainage network was working effectively at the time of the event with the average silt levels within the target of 70% full in the streets affected by the flood event.

As part of the exercise to gather information on the 12th July event we received further information on property damage of the 25th July event. Given the timing, geography and impact of the event on the 25th July we now believe that this warrants its own separate report and that process been started.

If you have any queries about this Report or wish to inspect any of the Background Papers, please contact Phil Robson probson@westminster.gov.uk

APPENDICES:

Appendix A – Terms of Reference Appendix B – Section 19 Report

BACKGROUND PAPERS

None

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Terms of reference Section 19 Flood Investigation Report on July 2021 flooding events

Background

Section 19 (S19) of the Flood and Water Management Act (FWMA) 2010 places a statutory duty on Westminster City Council, as Lead Local Flood Authority (LLFA) for the area, to investigate flooding incidents in Westminster.

Following exceptional rainfall on 12th July 2021, multiple wards in north Westminster suffered severe flooding. Westminster City Council will now undertake an S19 investigation in accordance with the process set out in <u>Westminster's Local Flood Risk Management Plan</u>, to ensure that future incidents are mitigated and responded to as effectively as possible.

We will also investigate if there were any different contributing factors in the flood event of 25th July 2021.

Purpose and scope

The purpose of the investigation is to understand how the incident occurred and what functions were exercised by Risk Management Authorities (RMAs) in response to the flood.

The investigation will identify the RMAs that have a flood risk management function in Westminster. It will detail what actions each RMA has undertaken or proposed in response to the flooding incident.

The investigation will be undertaken as soon as practical after the flooding incident and will be appropriate to the scale and nature of the incident. The results of these investigations will be published in a Flood Investigation Report (FIR) and made available to the public.

The FIR will provide information regarding the flooding including the flooding mechanisms, flood responses from the risk management authorities and set out recommendations for further future work. The FIR will bring together data from the risk management authorities and other relevant agencies as appropriate such as London Fire Brigade.

The investigation is not an in-depth analysis of the flood risk, event magnitude or flooding mechanisms. Flood investigations additionally do not give the Council powers to require any parties to undertake any work.

Membership

The RMAs required to take part in the investigation include:

- highway authority and LLFA Westminster City Council
- drainage authority Thames Water
- strategic authority for flooding Environment Agency

Westminster City Council's flood risk consultants, WSP, will provide support and analysis of data collected on the floods.



Roles and responsibilities

As the LLFA and highways authority, Westminster City Council are the risk management authority responsible for the management and maintenance of the highway drainage. They are the RMA responsible for managing local flood risk including flooding from surface water, ordinary watercourses and groundwater.

Thames Water are the RMA responsible for managing the risk of flooding from the local sewerage network (including combined sewerage systems) and their water supply network.

The Environment Agency has an overall strategic overview of flood risk from all sources and coastal erosion.

Timeline

A first draft of the FIR will be published in September but this will be subject to further iterations as we gather additional information from the other RMAs.



12TH JULY 2021 SECTION 19 INTERIM FLOOD INVESTIGATION REPORT - 15^{TH} SEPTEMBER 2021

This document has been prepared by Westminster City Council as the Lead Local Flood Authority (LLFA) under Section 19 of the Flood and Water Management Act 2010, with the assistance of:

- Westminster City Council (WCC)
- Environment Agency
- Thames Water
- Local residents

The findings in this report are based on the information available to WCC at the time of preparing the report. WCC expressly disclaim responsibility for any error in or omission from this report. WCC does not accept any liability for the use of this report or its contents by any third party.

The Flood and Water Management Act 2010 states a LLFA must investigate which flood management authorities have relevant flood risk management functions in Westminster. The LLFA must investigate the actions each risk management authority has exercised or is proposing to exercise in response to the flood event¹.

A section 19 flood investigation report is a public account of how the flood incident occurred and the responsibilities of the various risk management authorities. WCC has developed the following threshold for prioritisation of flood events for which a Section 19 flood investigation will be undertaken.

- 1. Flooding that posed a threat to the safety of the public or may directly result in serious injury or death.
- 2. Five or more properties internally flooded in one location.
- 3. One or more piece of critical infrastructure was affected that impacted the wider area.
- 4. Flooding that places vulnerable individuals or vulnerable communities at risk e.g. hospitals, care and nursing homes, schools, secure units, etc.
- 5. Additionally, where one or more residential property has flooded internally from the same source on five or more occasions within the last five years.

WCC may investigate the causes of flooding outside of the above criteria when determined merited². The flood investigation will cover the number of properties affected by the event, causes of flooding and the responsibilities of the various risk management authorities. The recommendations from the section 19 flood investigations enable LLFAs to learn lessons from flood events and address associated infrastructure needs.

This is an interim report while consultation is ongoing with the risk management authorities (Thames Water, Environment Agency and neighbouring boroughs) and local residents/ businesses.

Page 11

Summary of event

On the 11th July 2021, the Met Office issued a Yellow Rain Warning for the south-east of England. During the afternoon of the 12th July 2021 intense rainfall and thunderstorms caused flooding to areas of Westminster, specifically Paddington and the West Kilburn / Maida Vale areas. The nearest Environment Agency rain gauge is located at Putney Heath Reservoir (approximately 8.5km to the south-west of the main areas affected in Westminster) recorded 40.1mm between 2pm and 5pm and a total 24-hour rainfall of 47.4mm. The average rainfall for London in July is approximately 45mm³. Anecdotal conversations with stakeholders suggest that the rainfall return period may have been highly variable depending on location; estimates for the rainfall return period vary from a 1 in 35 year to a 1 in 300 year storm event. Due to the distance of the Putney Heath Reservoir rain gauge, at the time of writing this report it is not possible to accurately state the magnitude of the 12th July 2021 event. As a result of the high intensity rainfall, highway drains and the local sewer network were unable to cope with the intense and high volume of rainfall. This information will be updated and confirmed during ongoing consultation with Thames Water.

Based on information from the survey undertaken by WCC and WCC's Emergency Response team, approximately 230 properties and 64 roads were impacted by flooding across Westminster with residents along Kilburn Park Road, Essendine Road, Formosa Road and Shirland Road being evacuated. Other locations impacted by flooding as reported by WCC's Emergency Response team included one primary school, three libraries and three community centres. As part of those 230 properties 80 were reported by Thames Water as having flooded internally. Seven of the London Underground lines were delayed or closed due to flooding or signal failures. This information will be updated and confirmed during ongoing consultation with Thames Water. A second flood event occurred on the 25th July 2021 and given the timing, geography and impact of the second event we now believe that this warrants its own separate report and that process been started. It's important for the City Council and other agencies to understand what happened and why and a standalone report will support that aim.

Rights and Responsibilities

LEAD LOCAL FLOOD AUTHORITY (LLFA)

WCC act as both the LLFA and Highway Authority. As the LLFA WCC are responsible for managing local flood risk (risks from surface water, groundwater and ordinary watercourses). The LLFA is responsible for developing and maintaining a Local Flood Risk Management Strategy, investigating local incidents of flooding and emergency planning after a flood event.

As the Highway Authority the council has a responsibility to ensure surface water enters the gully network in the streets and discharges to the Thames Water sewer network as efficiently and

¹ Flood and Water Management Act 2010, c. 19. Available at: https://www.legislation.gov.uk/ukpga/2010/29/section/19 ² City of Westminster, 2017. *Local Flood Risk Management Strategy* 2017-2022.

³ Sky News. 2021. *UK weather: Thunderstorms and heavy rainfall to hit much of country as Met Office issues yellow warning.* Available at: https://news.sky.com/story/uk-weather-thunderstorms-and-heavy-rainfall-to-hit-much-of-country-as-met-office-issues-yellow-warning-12365468

effectively as possible. WCC is responsible for the maintenance of highway drainage within the City of Westminster (excluding Transport for London assets).

THAMES WATER

Thames Water are the risk management authority responsible for the local sewerage network including the combined sewerage system. Thames Water is not responsible for drainage within a property. Thames Water as a risk management authority are required to cooperate with the LLFA during the Section 19 flood investigation.

TRANSPORT FOR LONDON

Transport for London (TfL) is responsible for the Strategic Road Network in the City and the gullies on that network. It is also responsible for London Underground drainage assets and TfL must ensure these assets do not increase flood risk.

ENVIRONMENT AGENCY

The Environment Agency is responsible for maintaining a strategic overview of all sources of flooding as defined under the Flood and Water Management Act 2010. The Environment Agency is responsible for flood management on main rivers. As the flooding in Westminster was the result of a combination of surface water and sewer flooding the Environment Agency are not the responsible risk management authority for the source of flooding on the 12th July flood event.

Introduction

SITE DESCRIPTION

Westminster is a heavily urbanised inner city borough located in central-west London. The Borough is bordered by the Royal Borough of Kensington and Chelsea to the west, Camden Council and Brent Council to the north and the City of London to the east. The southern border of the Borough is the River Thames. The general topography of Westminster falls towards the River Thames from the north-west to the south-east. Annex 1 at the end of the report shows the Greater London Topographic map.

Among the affected areas Maida Vale and West Kilburn are heavily urbanised areas located to the northwest within the Borough. The local topography gently slopes from an eastern to western direction approximately 30m Above Ordnance Datum (AOD) to the west of West Kilburn to approximately 24m AOD in Maida Vale and the surrounding area.

Paddington is a heavily urbanised area bordered to the south by Kensington Gardens and Hyde Park. The local topography gently slopes from both the east and west areas towards the south from approximately 23m AOD to approximately 19m AOD to the south of the Great Western Main Line.

There are several surface water features within the Borough including the River Thames (located approximately 4km to the south of Paddington) and the Grand Union Canal (located approximately 500m to the north of Paddington). Key national infrastructure within Westminster includes: seven

Page 13

underground stations serving 10 of the 11 London Underground lines, The Houses of Parliament and Buckingham Palace.

Westminster is located above a regional chalk aquifer which is covered with clays, silts and gravel. A review of the Cranfield University Soilscapes database indicates that the majority of the underlying soils in Westminster are slowly permeable clayey soils.

Drainage

The highway drainage is owned and maintained by WCC as the Highway Authority, and generally consists of gullies connected to the combined sewers. The public drainage across Westminster consists of combined sewerage infrastructure which is owned and maintained by Thames Water. A combined sewerage system carries a mixture of surface water and foul water. During periods of intense rainfall, the available capacity within these sewers can be exceeded. When this occurs combined surface water and foul water can back-up into properties unless flow is able to spill out elsewhere. Therefore, combined sewer overflows were developed to allow the network to outflow into rivers and reduce the risk of water backing up into properties⁴.

The Thames Water sewer network are combined sewers designed in the 1860s. North of the River Thames the combined sewers flow from west to east and all flows are treated at the Beckton Sewage treatment works in east London during normal operation. The City of Westminster's sewer system receives flows from the Royal Borough of Kensington and Chelsea to the west. The River Westbourne and River Tyburn were culverted and now form part of the combined sewer network⁵. During periods of intense rainfall, the network flows from north to south with the flows discharging into the River Thames.

In 2015 Thames Water built the £21 million Maida Vale flood alleviation scheme. New sewers were constructed on Chippenham Road and Formosa Street⁶. The scheme increased the capacity of the sewerage network to cope with a 1 in 30 year storm event. During ongoing consultation with Thames Water the performance of the flood alleviation scheme during the 12th July flood event will be confirmed. Maida Vale and West Kilburn are served by an approximately 2m diameter trunk sewer and storm relief sewer^{7,.8}. A weir was installed at Formosa Street which directs flows into the throttle pipe and then into the trunk sewer during normal operation. In storm events when the trunk sewer is at capacity flows back up over the drowned weir into a 20m diameter and 26m deep storage shaft located in Westbourne Green Park. **Error! Reference source not found.** shows a sketch of the

Annual Conference Papers. Water New Zealand, pp.1-3. Available at:

⁴ Environment Agency, 2020. Combined Sewer Overflows Explained. Available at:

https://environmentagency.blog.gov.uk/2020/07/02/combined-sewer-overflows-explained/

⁵ City of Westminster, 2011. Surface Water Management Plan.

⁶ Thames Water, 2014 Maida Vale Flood Alleviation Scheme Project update. Available at:

https://www.facebook.com/MaidaFloodAction/photos/pcb.289779381180114/289779211180131/?type=3&theater ⁷ Breeds, H., 2018. *Maida Vale And The Tale Of The Throttle Pipe - Passive-Control To Eliminate Foul Pumping.*

https://www.waternz.org.nz/Article?Action=View&Article_id=1560

⁸ City of Westminster, 2021. *Public meeting, Friday 30 July, 12-1pm*. [video] Available at:

https://www.westminster.gov.uk/flood-information-and-help, Minute 15:30 of meeting.

Maida Vale Flood Alleviation scheme. After the duration of the extreme storm event flows are pump back into the receiving sewer.



Figure 1: Sketch of Maida Vale Flood Alleviation⁷

An additional overspill tank was constructed in Tamplin Mews Gardens⁹. The tank was over 15m diameter and 15m deep. The project was part of the £350 million scheme Thames Water spent across London and the Thames Valley to protect properties at risk from sewer flooding between 2010 and 2015¹⁰. This information will be updated and confirmed during ongoing consultation with Thames Water.

FLOOD RISK

sewer-flooding

The majority of Westminster, excluding its southern end, is located within Flood Zone 1, including Maida Vale, West Kilburn and Paddington. Flood Zone 1 is defined as having low probability of flooding from fluvial and tidal sources less than 0.1% annual probability of flooding.

Flooding from surface water is typically associated with natural overland flow paths and local depressions in topography where surface water runoff can accumulate during or following heavy rainfall events. WCC commissioned WSP in 2015 to undertake enhanced surface water modelling in Westminster. This study used the 2d Thames Water sewer network to identify areas within Westminster at the greatest risk of surface water flooding. The surface water flood risk maps produced from the study for the 30 year, 100 year and 1000 year storm return period have been

https://www.mylondon.news/news/local-news/thames-water-build-two-underground-6759411

⁹ My London, 2014. Thames Water to build two underground tanks to stop sewer flooding. Available at:

¹⁰ Water Briefing, 2013. Thames Water invests £17.5m to prevent sewer flooding. Available at: https://www.waterbriefing.org/home/company-news/item/7619-thames-water-invests-%C2%A3175m-to-prevent-

incorporated into the Environment Agency's Surface Water Flood Map. WCC's Flood Risk from Surface Water map shows that the areas indicated to be at a high risk of flooding from surface water sources included areas that experienced flooding during the July 12th flood event¹¹. Annex 2 at the end of the report shows an extract from WCC's Flood Risk from Surface Water map.

Groundwater flooding typically occurs in low lying areas where groundwater springs reach ground level. Westminster sits on a regional chalk aquifer covered by clay, silt and gravels. The Westminster Local Flood Risk Management Strategy 2017 outlines that the risk from groundwater flooding is low in Westminster. Potential impacts are generally more significant for basements.

Flooding History in Westminster

PREVIOUS FLOOD INCIDENTS

Information on previous flood events is limited, therefore information was obtained from various sources including feedback from residents. Evidence indicates that on the 29th May 2018 flooding occurred to 39 properties in Pimlico due to heavy rainfall and failure of the Longmoore Street Pumping Station. Flooding previously occurred on the 26th June 2016 when 44mm of rain fell on St James' Park¹² with widespread flooding in Pimlico also linked to the failure of the Longmoore Street Pumping Station¹³. This information will be updated and confirmed during ongoing consultation with Thames Water who own the Longmoore Street Pumping Station.

Table 4.1 from the Preliminary Flood Risk Assessment 2011 (PFRA) outlined five incidents of historic surface water flooding. These incidents included the closure of Victoria Station and flooding to Westminster Station entrance. The PFRA outlined basement property flooding on Formosa Street due to sewer flooding and property flooding along Dorset Street caused by surface water sources¹⁴. The Brent and Kilburn Times reported Maida Vale flooded in June 2009 and in July 2007 due to the sewer network becoming overloaded¹⁵. In July 2007 parts of England experienced over 100mm of rain within a 24-hour period and the River Thames overflowed its banks. During the summer 2007 floods 1,410 properties and businesses were internally flooded across London¹⁶. The Met Office estimated the storm return period exceeded a 1 in 200 year event in parts of England¹⁷. WCC have reviewed the council's flood incidence records and no further flood events were identified.

Page 16

¹¹ High risk of flooding from surface water is defined as having a greater than 3.3% chance of flooding every year. Medium risk of flooding from surface water is defined as having between 1% and 3.3% chance of flooding. Low risk of flooding from surface water is defined as having between 0.1% and 1% chance of flooding.

¹² BBC News. 2016. *Travel disruption and floods warnings as South East hit by more rain*. Available at: https://www.bbc.co.uk/news/uk-36603508

¹³ Cities of London & Westminster Conservative Association. 2018. *Flooding in Pimlico again*. Available at: https://www.twocitiesconservatives.org.uk/news/flooding-pimlico-again

¹⁴ City of Westminster, 2011. *Preliminary Flood Risk Assessment*.

¹⁵ Brent and Kilburn Times, 2009. Thames chiefs in hot water. Available at:

https://www.kilburntimes.co.uk/news/thames-chiefs-in-hot-water-3676110

¹⁶ BBC News. 2008. The summer floods: What happened. Available at: http://news.bbc.co.uk/1/hi/uk/7446721.stm

¹⁷ Met Office. *Heavy rainfall/flooding - July 2007.* Available at:

https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-

events/interesting/2007/heavy-rainfall_flooding---july-2007---met-office.pdf

Table 1 outlines the historic sewer flooding taken from the Strategic Flood Risk Assessment (2019). This information will be updated and confirmed during ongoing consultation with Thames Water. An internal incident is defined as when sewer flooding causes internal property flooding.

Postcode	At least 2 internal incidents in the last 10 years	At least 1 internal incident in the last 10 years	At least 1 internal incident in the last 20 years	At least 2 internal incidents in the last 10 years	At least 1 external incident in the last 10 years	At least 1 external incident in the last 10 years
W9	1	10	8	0	0	0
W2	0	2	44	0	0	1
W1	1	8	442	0	2	0
SW1	11	2	738	1	1	1
NW1	1	4	76	0	0	0
NW6	0	2	0	0	1	0
NW8	0	0	0	0	0	0
WC2	0	0	4	0	0	0
SW7	0	0	0	0	0	0
SW3	0	0	50	0	0	0
Total	14	28	1,362	1	4	2

Table 1: Summary of the historic flood records

Flood Incident Description

MAGNITUDE OF THE EVENT

Information was obtained from the Met Office regarding local rainfall data. The closest Environment Agency rain gauge is located at Putney Heath reservoir approximately 8.5km to the south-west of the main areas affected during the flood event. The Putney Heath reservoir rain gauge recorded 40.1mm between 2pm and 5pm. The next nearest rainfall gauge is located at Kew Gardens, approximately 12km to the south-west of Westminster, recorded 40.2mm between 3pm and 6pm. Figure 2 below shows a comparison of the rainfall data recorded at the Kew Gardens and Putney Heath reservoir rain gauges.

Page 17



Figure 2: Comparison of rainfall gauges - 12th July 2021

Based on information provided by the Met Office and Thames Water; due to the very localised nature of the intense rainfall experienced during the flood event, it is highly likely that the closest rain gauges did not record the actual amount of rainfall experienced across Westminster. As a result, it is not considered useful to estimate the Annual Exceedance Probability (AEP), where the AEP is the likelihood of rainfall of this depth or more falling in a year in a location. This information will be updated and confirmed as appropriate during ongoing consultation with Thames Water and the Environment Agency.

Thames Water stated in a LinkedIn post that in some areas the rainfall was equivalent to a 1 in 300 year return period¹⁸. It is expected that Thames Water will provide further information on the calculation of the rainfall return period as part of their review of the event.

FLOOD INCIDENT DESCRIPTION

The flood incident that occurred on Monday 12th July 2021 was the result of intense rainfall during the afternoon. The Met Office reported a convergence line developed from East Anglia down to west London in the afternoon. A convergence line occurs when winds of differing directions combine and rise up into the atmosphere. This leads to the development of thunderstorms and showers. Rainfall radar imagery shown in Figure 3 below outlines how the intense rainfall and thunderstorms rapidly developed in the afternoon. The storm travelled from north to south in west London. More than 32mm of rainfall per hour fell in the areas that are shown as white in Figure 3 below.

¹⁸ Thames Water, 2021. Available at: https://www.linkedin.com/posts/thames-water_a-message-from-steve-spencerour-operations-activity-6823527837107154944-aQ7S





Figure 3: Met Office 12th July Radar Imagery

The London Fire Brigade stated they had received over 1,000 calls in relation to the flooding across London and Thames Water stated they had received over 2,500 calls in five hours on the 12th July¹⁹. council's out of hours call centre took 1173 calls that evening. Generally, they would forecast 209 calls which further illustrates the scale of the event.

WCC undertook a survey of affected residents in August 2021 collating information about the 12th July flood event to inform this Section 19 Investigation. Table 2 below provides a summary of the known properties impacted, including the information collated from the flood survey. Based on the survey responses, it can be qualitatively estimated that damages from the flood event were in excess of £1 million. At the time of writing this interim report it is known over 234 properties internally flooded.

Flood incident data from Thames Water will be obtained during the ongoing consultation due to the widespread reports of sewerage flooding. As part of those 234 properties 80 were reported by Thames Water as having flooded internally, these properties are included below in Table 2. Annex 3 at the end of the report shows the location of the impacted roads. This information will be updated and confirmed during ongoing consultation with Thames Water.

¹⁹ BBC News. 2021. *Flash floods: Parts of London receive a month of rain in one day*. Available at: https://www.bbc.co.uk/news/uk-england-london-57816647

Table 2: Summary of the investigated flooding issues

Road Location	Number of Internally Flooded Properties	Comments/Cause	Source of Data
Abbey Road	2	Flooding occurred due to overflowing drains. A resident reported 130cm flood depth to the basement property.	Thames Water, WCC and Resident Questionnaire
Alexander Street	1		Thames Water
Ashworth Road	1		Thames Water
Bayswater Road	1	Lancaster Gate Tube Station	Thames Water
Beethoven Street	1		WCC
Belgrave Gardens	1		Thames Water
Blomfield Road	1		Thames Water
Boundary Road	3	Internal flooding to the basement and property ground floor.	Thames Water
Bourne Street	1	Approximately 30cm flood depth	WCC and Resident Questionnaire
Bourne Terrace	1		WCC
Bristol Gardens	6	Basement flooding between 15cm to 60cm flood depth. Residents reported overflowing sewers as the flood source. Properties were uninhabitable and residents reported the entire street was flooded.	Thames Water, WCC and Resident Questionnaire
Bristol Mews	1		Thames Water
Caroline Terrace	2		Thames Water

11 Westminster City Council - Section 19 Interim flood investigation report

Chepstow Road	1		WCC
Chippenham Road	3		Thames Water and WCC
Clarendon Gardens	2		WCC
Cleavedon Square	1	70cm internal flood depth. The resident reported the property is uninhabitable. The resident stated the road drains flood between 3-5 times a year.	Resident Questionnaire
Clifton Hill	1		WCC
Cliveden Place	1		Thames Water
Craven Road	2		Thames Water
Delaware Road	1		WCC
Devonshire Terrace	4	50cm to 100cm internal property flood depth. Resident reported flooding was caused by sewers overflowing. The resident reported the property was uninhabitable	Thames Water, WCC and Resident Questionnaire
Droop Street	1		WCC
Duke Street	1	Flooding to property basement and ground floor.	Thames Water
Eaton Terrace	2		Thames Water
Edgware Road	1		Thames Water
Elgin Avenue	9	Flooding to basement properties. One resident reported 5cm of internal property flooding.	Thames Water, WCC and Resident Questionnaire

Essendine Road	5	Flooding to basement properties. Residents reported 10cm to 50cm of internal property flooding. Residents were evacuated. Source of flooding stated as overflowing sewer and overland flows.	WCC and Resident Questionnaire
Fernhead Road	1		WCC
Formosa Street	5	100cm internal property flood depth. Residents were evacuated. Residents stated flooding caused by sewer flooding.	WCC and Resident Questionnaire
Garway Road	1		WCC
Gloucester Terrace	6	Up to 100cm internal flood depth. One resident reported the property was flooded due to a blocked drain.	WCC and Resident Questionnaire
Great Western Road	1		WCC
Green Street	1		Thames Water
Harrow Road	5	70cm flood depth. Flooding to basement and ground floor of properties.	Thames Water, WCC and Resident Questionnaire
Hatton Street	1	5cm internal flood depth. Property is uninhabitable and resident reported flooding is due to building roof.	WCC and Resident Questionnaire
Hereford Road	1		Thames Water
Kilburn High Road	1		WCC

Kilburn Park Road	52	Flooding due to overflowing drains Resident reported 130 properties were flooded on Kilburn Park Road. Residents were evacuated. Basement flats were inundated by up to 100cm depth of flooding.	Thames Water, WCC and Resident Questionnaire
Lanark Road	1	Basement property was inundated by 50cm internal property flood depth. Source of flooding was overflowing sewer. Resident reported the several neighbouring properties were flooded.	Resident Questionnaire
Lancaster Mews	1	Flooding to ground floor of property.	Thames Water
Lanhill Road	5	Basement properties were affected by up to 100cm internal property flood depth. Source of flooding was overflowing sewer. Resident stated several properties on Lanhill Road were flooded.	Thames Water, WCC and Resident Questionnaire
Longmoore Street	5		Thames Water
Maida Vale	1		Thames Water
Ormonde Court	1		Thames Water
Oxford Street	1		Thames Water
Pimlico Road	8	Flooding to basement and ground floor.	Thames Water
Portman Square	1		Thames Water
Princes Gate	1		Thames Water
Queensway	1		Thames Water

Randolph Crescent	1		Thames Water
Saltram Crescent	4		WCC
Shirland Road	35	Basement flats were internally flooded up to 1.5m flood depth. Residents reported source of flooding as overflowing sewers. Residents were evacuated and properties are uninhabitable.	Thames Water, WCC and Resident Questionnaire
Sutherland Avenue	17	Internal property flooding to property basements and ground floor.	Thames Water and WCC
Upbrook Mews	2	30cm depth internal property flooding. Flooding was a result of overflowing drains. The resident states the property is uninhabitable.	WCC and Resident Questionnaire
Upper Tachbrook Street	2		Thames Water
Walterton Road	4	30cm to 100cm depth of flooding to basement properties. Residents reported several neighbouring properties were flooded. One resident stated the drains outside their property are often blocked.	WCC and Resident Questionnaire
Warwick Avenue	1		Thames Water
Westbourne Green	6	Basement and ground floor flooded.	Thames Water
Westbourne Grove	7	Flooding to property basement.	WCC
Westbourne Park Road	1		WCC

Westbourne Terrace Road	1	WCC
Whitehall	1	Thames Water
Total	234	

FLOOD MECHANISM

The flood incident that occurred on 12th July 2021 was the result of intense rainfall during the afternoon which led to the highway drainage and sewerage systems within Westminster becoming overwhelmed resulting in surcharge. The intense rainfall was exacerbated by the sewer layout as the network flows from north to south discharging via overflows into the River Thames during intense storm periods. The predicted high tide at Chelsea Bridge (approximately 3km south of the main flood area) was 6.15m and this occurred at approximately 16:45pm²⁰. Tidal lock may have had an effect and impacted the capacity of the network; this will be discussed and confirmed with Thames Water. Westminster receives flows from the wider London catchment, Thames Water reported that it is likely the network. Thames Water reported that for 45 minutes to an hour in the Kilburn Park Road area there was no capacity for the storm relief sewer to discharge into the trunk sewer²¹. This information will be updated and confirmed during ongoing consultation with Thames Water and the Environment Agency.

GULLY CLEANSING

In 2018 the City Council moved to a risk-based approach for managing highways assets to comply with the National Code of Practice – Well Managed Highway Infrastructure (WMHI) -. This included a risk- based approach to cleaning its gullies meaning that silt levels in gullies are recorded before cleansing. Based on silt level trends a cleaning regime is developed which aims to optimise the cleansing of gullies on a street. The council aim to clean gullies when the average silt levels are between 60% to 70% full, i.e. there is still capacity in the gullies to take surface water away. The measurement of silt levels in a gully is shown in Figure 4, the level of silt is measured from the bottom of the outlet pipe which runs to the Thames Water sewer.

²⁰ Chelsea Bridge Tide Times for 12th July 2021. Available at: https://www.tidetimes.org.uk/chelsea-bridge-tide-times-20210712

²¹ City of Westminster, 2021. *Public meeting, Friday 30 July, 12-1pm*. [video] Available at:



Figure 4: Sketch of gully pot silt levels

In addition to cleaning the gullies, the council also has an annual programme to replace gullies that are in poor condition or reached the end of their serviceable life. The council has replaced 673 gullies since 2017 with more upgrades planned. The council has done work to identify streets where standing water accumulates after periods of heavy rainfall. To reduce the risk of road flooding the council has carried out CCTV surveys on gully outlet pipes (the pipe that extends from the gully into the Thames Water Sewer) across the City to ensure they are in good condition and not reducing water flows into the sewers. Since 2017 the council has CCTV surveyed around 35% of its drainage network (roughly 20,000 metres of lateral pipe). In January 2021, the council commenced a trial of gully sensors to give real-time information on silt level data in gullies. The intention is to link this to Met Office weather warnings to enable the cleaning of gullies in areas vulnerable to surface water flooding ahead of significant rainfall events.

The gullies located in the worst affected flood areas (West Kilburn and Maida Vale) were generally among the most recently cleaned gullies. The majority of these gullies had been cleansed within three months prior to the 12th July flood event. WCC Highways recorded the average percentage of silt found in the gullies during cleaning operations varied from between 20% to 70% indicating that gully blockages were not a cause of the flooding. Annex 4 at the end of the report includes a table ('Affected roads gullies cleansing record) which outlines when the gullies were cleaned and the level of siltation.

Investment in Highways Drainage Infrastructure

Since 2018 the Council has invested £2.4m on CCTV surveys and the repair of gullies and collapsed lateral pipes with a further £6.8m of expenditure profiled up until 2027.

Flood Response

Thames Water deployed additional resources to support affected customers. The clean-up team were deployed to support customers clearing the debris and Thames Water completed work at over

Page 27

150 properties after the 12th July flood event²². This information will be updated and confirmed during ongoing consultation with Thames Water.

Conclusion and Recommendations

On the 12th July 2021 intense rainfall and thunderstorms caused flooding to areas of Westminster, specifically Paddington and the West Kilburn / Maida Vale areas. The nearest Environment Agency rain gauge located at Putney Heath Reservoir recorded 40.1mm between 2pm and 5pm and a total 24-hour rainfall of 47.4mm. Consequently, highway drains and the local sewer network were unable to cope with the intense and high volume of rainfall.

In a highly urbanised area such as London to more accurately capture the return period of future storm it may be beneficial to increase the concentration of reliable rain gauges.

It would also be beneficial for the council to keep better records of past flood events for future reference. Section 19 reports will help the council to maintain better flood records in the future.

WCC will review their current gully maintenance strategy and determine if the current frequency and strategy of maintenance is still appropriate or could be further optimised. WCC has commenced an investigation of its gully maintenance procedures, however the initial review has assessed that the gully network was working effectively during the 12th July flood event. As the average silt levels within gully pots were within the council's optimum range of 60% to 70% in the streets affected by during the 12th July flood event. The council will however look to see where it can make further improvements, these will be reported in the final version of the report once Thames Water's input is received.

Further consultation with other local LLFAs and Thames Water will be undertaken to start investigations as to whether there are wider catchment considerations that will reduce local flood risk across the wider London area. The Regional Flood and Coastal Committee may play a role in future consultation.

Thames Water are undertaking workshops with LLFAs in September 2021 and an independent review of the 12th July flood event; their findings and recommendations will inform the final version of this report. The date of the independent review is not known at the time of writing. However, it is anticipated the report review will take over 6 months.

²² Thames Water, 2021. Available at: https://www.linkedin.com/posts/thames-water_a-message-from-steve-spencerour-operations-activity-6823527837107154944-aQ7S



Annex 1 Greater London Topographic map²³

²³ Greater London Topographic Map. Available at: https://en-gb.topographic-map.com/maps/sn5u/Greater-London/

¹⁹ Westminster City Council - Section 19 Interim flood investigation report



Annex 2 Extract from WCC Flood Risk from Surface Water map

20 Westminster City Council - Section 19 Interim flood investigation report



Annex 3 Flood Locations map

Full list of known streets	Number of Gullies	Cleaned	Not Cleaned (parked cars/jammed lids/no access)	Average Silt %	Number of Cleans Per year	Last Date of Attendance	Number cleaned on second visit	Reactive visits since April 2020
Abbey Road	39	38	1	50.49%	1PA	27/07/2021	1	3
Avenue Road	35	18	3	60.00%	1PA	07/06/2021	2	3
Baker Street	38	35	3	48.65%	1PA	20/10/2020	0	2
Blandford Street	17	13	4	55.45%	1PA	20/10/2020	0	1
Blenheim Street	5	5	0	34.00%	1PA	15/10/2020	0	1
Blomfield Road	27	16	11	67.06%	1PA	01/03/2021	6	0
Bourne Street	11	7	4	72.86%	1PA	12/05/2020	0	0
Bristol Gardens	4	4	0	60.00%	1PA	09/07/2021	0	0
Castellain Road	35	22	13	70.91%	1PA	02/07/2021	0	1
Chester Row	21	19	2	61.58%	1PA	02/10/2020	0	2
Chippenham Road	12	3	9	60.00%	1PA	28/06/2021	0	1
Clarendon Gardens	2	0	2	50.00%	1PA	07/07/2021	0	0
Cleveland Square	13	8	5	43.33%	1PA	18/03/2021	2	2
Clifton Hill	21	14	7	22.31%	1PA	14/07/2021	1	0
Clifton Gardens	15	6	9	70.00%	1PA	05/07/2021	3	0
Clifton Villas	7	5	2	60.00%	1PA	25/06/2021	1	0
Cliveden Place	6	1	5	60.00%	1PA	18/03/2021	0	0

Delaware Road	29	20	9	60.00%	1PA	25/05/2021	0	1
Devonshire Terrace	13	12	1	55.00%	1PA	21/09/2020	0	3
Ebury Bridge Road	23	17	6	58.82%	1PA	18/11/2020	0	1
Elgin Avenue	69	56	13	67.20%	1PA	21/06/2021	5	2
Ennismore Street	3	3	0	70.00%	1PA	19/05/2020	0	0
Essendine Road	16	8	8	53.75%	1PA	05/05/2021	0	1
Formosa Street	17	11	6	64.00%	1PA	21/07/2021	5	1
Garway Road	5	4	1	57.50%	1PA	22/07/2021	0	1
Gloucester Terrace	53	28	25	56.30%	1PA	28/10/2020	0	6
Graham Terrace	17	11	6	70.00%	1PA	19/05/2020	0	3
Garrow Road	244	162	82	50.92%	2PA	08/06/2021	0	5
Huntsworth Moews	10	9	1	20.00%	1PA	15/06/2021	0	3
Kilburn Park Road	25	12	13	60.00%	1PA	11/05/2021	3	3
Lanark Road	46	41	5	59.76%	1PA	23/07/2021	0	2
Lanhill Road	9	4	5	68.00%	1PA	17/05/2021	0	1
Maida Vale	64	56	8	50.41%	1PA	24/04/2020	2	4
Manchester Street	12	8	4	60.00%	1PA	15/10/2020	0	0
Marylebone Lane	31	30	1	50.71%	1PA	15/10/2020	0	0
Montpelier Square	17	11	6	40.00%	1PA	18/03/2021	3	7
Newton Road	8	6	2	50.00%	1PA	09/07/2020	0	2
Palace Court	14	11	3	75.45%	1PA	02/07/2020	0	2

Queen's Gardens	9	6	3	55.00%	1PA	08/07/2020	0	2
Randolph Avenue	62	23	39	68.70%	1PA	17/05/2021	0	4
Randolph Crescent	20	11	9	73.33%	1PA	07/07/2021	0	1
Randolph Road	8	5	3	70.00%	1PA	07/07/2021	0	2
Second Avenue	7	5	2	52.00%	1PA	13/04/2021	0	0
Shirland Road	71	62	9	61.85%	1PA	22/07/2021	4	5
ST Christopher's Place	4	4	0	25.00%	2PA	30/04/2021	0	1
Sutherland Avenue	64	37	27	60.59%	1PA	15/07/2021	4	6
Bhayer Street	9	8	1	51.43%	1PA	19/10/2020	0	1
Torquay Street	4	4	0	66.67%	1PA	11/02/2021	0	0
Úpbrook Mews	7	7	0	42.86%	1PA	18/02/2021	0	0
Walterton Road	14	13	1	50.77%	1PA	09/09/2020	0	2
Warrington Crescent	28	17	11	63.53%	1PA	06/07/2021	0	1
Warwick Avenue	41	29	12	58.44%	1PA	23/07/2021	10	0
Westbourne Grove	54	41	13	36.59%	1PA	18/01/2021	5	4
Westbourne Terrace Road	4	1	3	60.00%	1PA	15/07/2021	0	2
Totals	Total number of	Total number of gullies	Total number of gullies not cleaned on					

24 Westminster City Council - Section 19 Interim flood investigation report

gullies =1439	cleaned =1007	initial visit =418.		
	(70% of			
	total)			

Annex 4 Affected Road Gullies Cleansing Record

70% of all gullies in the affected roads were cleared on the initial visit with the remained unable to be accessed primarily due to parked cars. Of the gullies that couldn't be accessed 13% were cleared on a second visit with the remainder to be cleared, as is routine, with the use of a car lifter before the end of November 21. We also clear gullies on a reactive basis if we receive enquiries from the public or our own highways inspectors.

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Agenda Item 5 AGENDA ITEM No:



City of Westminster

Finance, Smart City and City Management Policy and Scrutiny Committee

Date:	30 September 2021
Classification:	General Release
Title:	Flood incidents of 12 and 25 July 2021
Report of:	Thames Water
Cabinet Member Portfolio	City Management
Wards Involved:	Abbey Road, Bayswater, Lancaster Gate, Little Venice, Maida Vale

1. Executive Summary

This report is an interim report following flooding events in north Westminster in July 2021. The review report is expected in early 2022.

2. Key Matters for the Committee's Consideration

Heavy rainfall on 12 and 25 July resulted in flash flooding. On 12 July, more than a month's worth of rain fell in an hour. On 25 July, a month's worth of rain fell in two hours. The Met Office reported that the 'return period' (the likelihood of such a storm happening) for the storms on 12 July was between once in 101 to 179 years.

Thames Water estimated that 138 properties in Westminster were flooded 12 July and 11 on 25 July (figures as at 9th September). Thames Water is working with Westminster City Council and the London Fire Brigade to identify whether any further properties were flooded.

APPENDIX:

Thames Water interim briefing report

BACKGROUND PAPERS

N/A

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Finance, Smart City and City Management Policy and Scrutiny Committee report

Overview

We recognise the flooding following the 12 and 25 July storms were extremely distressing for many of our customers. The sheer volume of rain which fell was far more than our network was ever designed to cope with. To the best of our knowledge, our sewers and pumping stations performed as designed and the flooding was a result of the extreme weather events. We are committed to working with Local Authorities, the Environment Agency and other partners over the coming months to understand what more can be done to reduce the risk of reoccurrences in future. We have also commissioned an independent review which will examine the performance of our network and see if any lessons can be learned.

What happened?

On 12 July, more than a month's worth of rain fell in an hour. On 25 July, a month's worth of rain fell in two hours. The Met Office have reported that the 'return period' (the likelihood of such a storm happening) for the 12 July storms at between once in 101 to 179 years.

The intensity of these storms overwhelmed the drainage system in London, causing flash flooding, with water flowing across the ground into people's properties, or in some areas, causing the sewers to back-up and flood into their homes and businesses.

We are aware that 138 properties in Westminster were flooded from 12 July storm and 11 from the 25 July storm (figures as of 09 Sept). We are working with Westminster Council and London Fire Brigade to identify whether any further properties were flooded.

How did we respond?

The Met Office provided 'yellow' weather warnings for both storms covering most of the South-East of England, forecasting 20-25mm of rainfall with heavier localised downpours. Only late on the afternoon of 25 July was the yellow weather warning upgraded to an 'amber' warning, but with too little time for us to take any action.

Although we attended the major incident call run by the London Resilience Forum on the evening of the 12 July and had operational teams on the ground supporting customers as requests were received, we recognise we were slow to effectively mobilise a coordinated presence of customer support staff and operational leads for the multi-agency response on the ground. From the 15 - 23 July our customer support staff and our incident response vehicle, located on Kilburn Park Road, worked with Westminster colleagues to support customers in the affected area.

With the widespread nature of the forecast on 12 July, we were unable to say where would be impacted with the heavy showers so did not proactively liaise with Westminster emergency planners

in advance. For the 25 July forecast storm our Emergency planner proactively engaged with boroughs previously impacted, including Westminster, to check-in and offer support in advance of the further rainfall.

In Westminster, over the 3-week period from 12 July to 2 August, covering both storms, we undertook clean-ups at 112 properties.

Our Trust Fund, which helps our most vulnerable customers, has provided support (furniture and white goods) to 14 households.

How did our assets perform?

To the best of our knowledge, our assets operated as they should, but were overwhelmed by the sheer volume of water, which was significantly beyond the design capacity of the system. We found no blockages in the system which would have prevented the correct operation of the system.

The Northwest storm relief sewer, which runs through Westminster, was overloaded by the large volume of rainfall. Unfortunately, where this sewer would normally discharge excess flows of diluted wastewater to the Thames during heavy rainfall to prevent flooding, the high tide on the 12 July prevented the overflow flaps from opening. This design feature to stop high tides from entering the drainage system meant the sewer was unable to discharge the excess volumes and this resulted in the system backing up.

The Maida Vale flood alleviation scheme was designed to protect the 201 homes connected to the scheme against a 1 in 30-year storm. We estimate that up to 18 properties that were connected to the scheme may have flooded on 12 July. The Met Office put the intensity of the storms on 12 July in the Paddington area at up to 1 in 163 years. We are currently modelling the 12 July storm to see how the scheme performed against expectations based on its design.

The Independent Review (see below) being commissioned will help us to understand in more detail the effects of the storms and how our assets, as well as the drainage systems of Local Authorities, operated during the storms. We will pass our models and findings to the independent experts for their assessment.

Our customer call centre received more than double the number of expected calls. This led to unacceptable waiting times and understandably many people hung up.

What have we learnt?

We have undertaken internal reviews to identify what we could have done better to respond to the storms and how we could have further supported customers trying to contact us through our call centre.

The key findings are:

- We need to improve our preparation for adverse weather, especially where there is uncertainty about the intensity of the weather and confidence of the forecast.
- We need to be able to better determine when and where an incident is arising, especially when our assets haven't failed (i.e. there isn't a broken water main/ collapsed sewer)

- We need to improve our communications with other emergency responders on how we collaboratively plan for, respond to and limit the impact of further incidents (we did this in preparation of the 25 July storms and this had a positive impact)
- We need to be able to increase the capacity of our call centres at short notice, especially outside normal working hours, and find other ways to reach our customers to provide them with the information they need
- Where there is uncertainty over the cause of the incident and therefore responsibility for it, we need to take action to support our customers without concerns that in taking action we are wrongly accepting liability

We have already initiated a number of actions:

- We have increased the capacity of our call centres to respond to an incident by 20%
- We are monitoring social media to identify potential incidents and have 'scouts' ready to visit sites to validate whether an incident is building/occurring
- We have provided more information on our website on what to do during a flood and have made it easier to report a property as being flooded.

Independent Review

Given the seriousness of the flooding and the increasing risk of more severe weather events in the future due to climate change, we have commissioned an independent review to better understand how our assets performed and to identify potential solutions to make London more resilient to extreme rainfall.

The independent review will establish what happened on the days in question, how Thames Water's assets performed, with a focus on key flood alleviation measures (including Maida Vale flood alleviation scheme). The review will consider what factors may have contributed to the flooding and the wider implications for London's drainage infrastructure. The outcome will be a set of recommendations to Thames Water and other parties on how individually and collectively we can make London more resilient to extreme rainfall.

The review will be led by three industry-leading independent experts, supported by a team of consultants. They will be paid by us but be otherwise independent.

We have asked the experts to balance the desire for detail and comprehensive stakeholder engagement with the need to produce a report in a time where the findings can meaningfully inform our and other parties' plans. We estimate that the review should report in about six months, with interim reports as it progresses.

We have also set up a 'Strategic Stakeholder Panel' to enable stakeholders to input into the review. The panel includes senior officer representatives from the Greater London Authority, London Councils, the London Drainage Engineers' Group, Environment Agency, the Thames Regional Flood & Coastal Committee, Consumer Council for Water. Ofwat have been invited to join the stakeholder panel and we anticipate that they will attend as observers, as they wish to maintain their independence. The independent expert group will consult the stakeholder panel on the terms of reference for the review and the interim and final reports.

Thames Water – key facts

Bills

Water companies operate in five-year business cycles, known as AMPs, with the current one running from 2020-2025. For each cycle, we agree our business plan with the regulator Ofwat. This plan will set out how much money we can invest in our water and wastewater networks and how much we can charge customers in their bills. We do not therefore set our bills and once agreed, bills cannot be changed during the AMP other than for inflation.

Turnaround plan

Our CEO Sarah Bentley started a year ago and spent her first six months taking the time to understand the business and speak with stakeholders.

She found there are clearly identifiable problems in the business, and we accept that performance has not been good enough. We have put a 'turnaround plan' in place to become a well-run business with an improved reputation.

The company now has a strong leadership team following a range a new appointments, including a new Retail Director whose main focus is improving our poor customer service record.

We are harnessing new innovations such as a new workforce management system which centralises data from all customer interactions.

The recent extraordinary storms have shown the importance of tackling climate change so we recently announced our 2030 Net Zero roadmap and we are supporting the Mayor's 'Grow Back Greener' scheme to make sure every Londoner lives within 10 minutes of green space.

It will be a difficult journey, taking several years, but everyone in the business is committed to moving forward.

Ownership

There has been a lot of changes in recent years. The company is jointly owned by 10 institutional investors, made up mostly of pension funds, representing key workers, and sovereign wealth funds. The two largest investors represent pension funds in the UK and Canada. All the investors take a long-term view of the company's infrastructure, customers, and the natural environment.

Dividends

Our shareholders are committed for the long-term and have not taken a dividend for four years to prioritise investment in improving service for customers and to protect the environment which will benefit everyone.

Shareholder Investment

Earlier this month, it was announced following discussions with Ofwat, our shareholders are investing a further £300m to enable a major overhaul of the capital's Victorian water supply network. This investment unlocks a further £300m already provisionally included in the company's spending plans for 2020-2025 and will improve service by accelerating work to reduce leaks and bursts.

The additional funding to improve our water supply network will address longstanding issues, like leaks and bursts, and has been agreed through a regulatory process that ringfences the investment

for that purpose alone. The independent review we are currently commissioning into the performance of our assets during the flooding will help inform our future investment in London's wastewater network.

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Agenda Item 6 AGENDA ITEM No:



City of Westminster

Finance, Smart City and City Management Policy and Scrutiny Committee

Date:	30 September 2021
Classification:	General Release
Title:	LFB Major Incident 12 July and Subsequent Major Incident Declaration due to adverse weather conditions 2021 - briefing
Report of:	London Fire Brigade
Cabinet Member Portfolio	City Management
Wards Involved:	Abbey Road, Bayswater, Lancaster Gate, Little Venice. Maida Vale

1. Executive Summary

This report is an interim briefing report following flooding events in north Westminster in July 2021.

2. Key Matters for the Committee's Consideration

On Monday 12th July 2021, the London Fire Brigade (LFB) declared a Major Incident (MI) due to heavy rainfall, which created serious flooding predominantly across the south-west and north-west of London. The City of Westminster was affected during this Major Incident. Other boroughs affected included: Kensington & Chelsea, Hammersmith & Fulham, Wandsworth, Hounslow and Hillingdon.

APPENDIX:

Briefing for Mayors Round Table

BACKGROUND PAPERS

N/A



26th July 2021

Subject

LFB Major Incident 12 July and subsequent Major Incident Declaration due to adverse weather conditions 2021

Brief for

Assistant Commissioner Andy Hearn – Mayors Round Table Meeting

Overview

On Monday 12th July at approximately 19:30 the London Fire Brigade (LFB) declared a Major Incident (MI) due to heavy rainfall creating serious flooding predominately across the south-west and northwest of London. The boroughs affected included: Kensington & Chelsea, Hammersmith & Fulham, Wandsworth, Hounslow, Hillingdon and Westminster, however many other boroughs saw significant increase in flood related calls.

At its peak between (17:00 - 21:00) we recorded 1,430 incidents with the total number of calls to flooding totalling 1,755 by midnight. In comparison the LFB records, on average, 115 incidents daily during the same timeframe.

The type of calls received included life threatening and non-life-threatening calls, examples of noted incidents with additional risks were:

- Vehicles stuck in high water with people trapped inside
- Flooding in residential premises, including properties where people needed assistance evacuating or rescue
- Flooding where there was a danger of fire
- Partial collapse of structures due to water
- Flooding to the infrastructure, including transport and electrical substations

The increased call volume began at approximately 1630hrs and was sustained until approximately 2200hrs when demand for the London Fire Brigade, although still high, slowed sufficiently to see a reduction in call volume.

Response

In response to the increase in demand the LFB implemented a number of measures, including:

- Batch mobilising this sees one fire appliance allocated a batch of calls (between 10-20) that are mostly in close proximity to efficiently respond to the high call volume
- Section 13 & 16 arrangements (mutual aid) were activated. This is our normal arrangements for cross border support from other Brigades that enabled outer London stations to centralise.

- Implemented a call triage system which ensured the LFB remained able to respond to our highest priority calls immediately.
- The brigade activated the Brigade Coordination Centre (BCC) as part of its strategic response arrangements. This focused on key tactical areas for delivery including, planning & logistics, operations, communications and resources.
- Additional communications channels to support the direct link between Brigade Control and command officers were implemented.
- Level one and level two water rescue capability was deployed which enhances the LFB response to safety in water related incidents with the latter being more advanced.
- Recalled to duty a national flood tactical advisor.
- Deployed specialist flood response personal protective equipment for responders from our operational support centre.

Major Incident

Following a meeting of duty officers that concluded at 19:45, the declaration of a major incident was shared across the partnership with the support of London Resilience and took a primary role in the Strategic/ Gold partnership call at 20:30.

A ¹METHANE message to support situational awareness was shared with partners via the tri-service call and shared across all category one and two responders via the London Situational Awareness System (LSAS). This is an agreement that is noted in the Strategic Coordination Protocol (SCP) for London and was implemented following recommendations from the Grenfell Inquiry.

The meeting brought together key agencies, including local authorities to ensure support was available for impacted residents. A communications group was stood up and a strategy was agreed and implemented.

The Major Incident was stood down at 2230hrs.

London Operations Centre (LOC) known as Brigade Control

In addition to the 999 calls directly attributed to flooding, other calls increased. It is estimated that Brigade Control dealt with 3000 calls during this period which lasted throughout the night up to approximately 08:00 on the 13 July. The data makes this the busiest recorded period for the brigade.

A regulated attendance was implemented to support the triage system prioritising life risk calls but also sending different or alternative resources to incidents to maintain the availability of life saving capabilities.

Existing arrangements were implemented that diverts the overflow of calls from the LFB to the North-West Fire Control, Staffordshire and West Midlands Fire Control. The call volume was such that all fire control rooms in the UK were asked to receive calls. Throughout the duration of the incident Brigade Control shared updates on call volume and call management strategy with partner agencies and UK Fire Control rooms via ²Talk group 20.

Due to the sheer volume of calls, Brigade Control triggered a request for additional control officers to recall to duty to assist with the operation. Data indicates this was the busiest period for LFB control since recorded records began.

¹ A METHANE message is part of JESIP to share state and the emergency services.

² Talk group 20 is an open Airwave radio channel that enables immediate briefings to all UK fire control rooms

Overview

On Sunday 25th July at approximately 14:30, the London Fire Brigade (LFB) started to receive large volumes of calls to weather related incidents, heavy rainfall creating serious flooding, predominately across the south-west and north-east of London. The boroughs that were affected included, were not isolated but the Boroughs of Waltham Forest, Redbridge and Barking and Dagenham were particularly affected, however many other boroughs saw significant increase in flood related calls.

At its peak between (14:30 – 19:00) we recorded approximately 1000 flood related incidents with the total number of calls to totalling 1,545. LFB attended 759 incidents by midnight. In comparison the LFB records, on average, 115 incidents daily during the same timeframe.

A regulated attendance was implemented to support the triage system prioritising life risk calls but also sending different or alternative resources to incidents to maintain the availability of life saving capabilities.

The type of calls received included life threatening and non-life threatening calls, examples of noted incidents with additional risks were:

- Vehicles stuck in high water with people trapped inside
- Flooding in residential premises including properties where people needed assistance evacuating or rescue
- Flooding where there was a danger of fire
- Partial collapse of structures due to water
- Flooding to the infrastructure, including transport and electrical substations

The increased call volume began at approximately 1430hrs and was sustained until approximately 1930hrs when demand for the London Fire Brigade, although still high, slowed sufficiently to see a reduction in call volume.

Two Major Incidents were declared by partner agencies:

- 1. Metropolitan Police declared a Major Incident for Charlie Browns at roundabout 1721 and surrounding area, due to serious flooding and life risk:
- A number of vehicles were stuck in water of approximately 600mm with people trapped inside. A systematic search was undertaken to confirm no persons trapped.
- Flooding impacted a residential premise of four floors preventing in excess of 200 persons being able to leave.
- Water was dispersed into the River Roding with the support of the Environment Agency.

The Major Incident was stood down at approx. 21:37

2. NHS Barts Trust declared a Major Incident at 20:30 due to flooding within their basement surgical ward and energy centre of up to 3 feet deep. This impacted their ability to utilise power and with the failure of the back up generators rendered three wards inoperable.

A 6-pump special service was authorised by the Duty Assistant Commissioner following a proactive engagement at the Gold Pan London call. Page 49 102 patients across three wards need to be removed and relocated. 20 Patients from the maternity ward were relocated within Whipps Cross, with a further 83 patients removed from their wards and supported by LFB crews to awaiting ambulances. Crews remained on scene and supported NHS colleagues for over 15 hours.

Control lifted regulated attendance at 19:30 and are currently working through the calls held under batch mobilising as well as calls passed from other FRS control rooms to confirm attendance is still required. We currently have approximately 540 open calls.

The direction to commit pumping appliances to clear outstanding batched incidents whilst balancing fire cover remains with the plan to maintain at least 60 appliances available for fire cover.

LFB did not declare a Major Incident on the 25th July and were able to maintain fire cover without the need for mutual aid. Our BCC was not stood up and incidents were dealt with under normal business with the exception of Batch Mobilising. LFB cleared remaining batched calls at approximately 10am on the morning of the 26th July.

London Fire Brigade Assets

- All operational staff are 'water awareness' trained.
- All pumping appliances carry lifejackets as well as throw lines and inflatable hose kits for reaching people in water.
- We have 10 specialist water rescue teams (FRUs) equipped with inflatable boats, engines, dry suits and inflatable rescue paths.
- We have specialist flood response equipment available on request (20 rigid boats, 200 x 2 piece flood suits, floating pontoon systems and 250m of free standing flood barriers)
- There are 24 officers with the TAR tag who can provide advice at incidents.
- The LFB have declared 3 x 'Type B' flood response teams for out-of-area deployment to support the NCAF arrangements.

Agenda Item 7



30 September 2021
General Release
2021/2022 Work Programme
Head of Governance and Councillor Liaison
Finance and Smart City City Management
All
All
Artemis Kassi <u>akassi@westminster.gov.uk</u>

1. Executive Summary

1.1 This report requests that the Committee discuss topics for the work programme for the remainder of the municipal year.

2. Next meeting date for the 2021/2022 year

2.1 The Committee is reminded that there are currently four scheduled meetings remaining for the municipal year 2021 and 2022. The next scheduled meeting for the 2021/2022 year is 19th October 2021.

Dates for the remainder of the municipal year are: 24th November 2021, 20th January 2022 and 29th March.

3. Westminster Floods

- 3.1 The Committee will discuss its work programme at the meeting on 19th October. In the meantime, the Committee is asked to consider revisiting the floods which occurred in the City of Westminster in July 2021 by adding this topic to its the work programme for early 2022.
- 3.2 Adding this as an agenda item to the January or March meetings would allow the Committee to consider more complete reports by all involved parties,

including the complete section 19 report, the review by Thames Water and the London Fire Brigade, as appropriate.

If you have any queries about this report or wish to inspect any of the background papers, please contact Artemis Kassi:

akassi@westminster.gov.uk

APPENDIX

Appendix 1 – Terms of Reference

BACKGROUND PAPERS

N/A

FINANCE, SMART CITY AND CITY MANAGEMENT POLICY AND SCRUTINY COMMITTEE

Terms of Reference (as per the Constitution, 15th February 2021)

Composition

Eight (8) Members of the Council (five Majority Party Members and three Minority Party Members,

but shall not include a Member of the Cabinet.

TERMS OF REFERENCE

(a) To carry out the Policy and Scrutiny functions, as set out in Article 6 of the Constitution, in respect of matters relating to all those duties within the terms of reference of the Cabinet Member for Finance and Smart City and the Cabinet Member for City Management.

(b) To carry out the Policy and Scrutiny function in respect of matters within the remit of the Council's non-executive Committees and Sub-Committees, which are within the broad remit of the Committee, in accordance with paragraph 13 (a) of the Policy and Scrutiny procedure rules.

(c) Matters, within the broad remit of the Cabinet Members referred to in (a) above, which are the responsibility of external agencies.

(d) Any other matter allocated by the Westminster Scrutiny Commission.

(e) To have the power to establish ad hoc or Standing Sub-Committees as Task Groups to carry out the Scrutiny of functions within these terms of reference.

(f) To scrutinise the duties of the Lead Members which fall within the remit of the Committee or as otherwise allocated by the Westminster Scrutiny Commission.

(g) To scrutinise any Bi-borough proposals which impact on service areas that fall within the Committee's terms of reference.

(h) To oversee any issues relating to Performance that fall within the Committee's terms of reference.

(i) To have the power to scrutinise those partner organisations that are relevant to the remit of the Committee.

(j) To consider any Councillor Calls for Action referred by a Ward Member to the Committee.

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