LONDON FIRE BRIGADE

Appendix three

Detailed report: Layer Two, Data Lead Assessment of Ordinary (commonly occurring) Risks

OFFICIAL
23 February 2026

Contents

2 Introduction, scope and approach 3

3 Objectives 4

4 Limitations 4

5 Key Findings 5

6 Risk Matrices 6

7 Geographic disposition of risk – NFCC Definition of Risk: Dwelling Fire Risk Map 9

8 Geographic disposition of Risk - Non-Dwelling Building Fire 10

9 Geographic disposition of risk – NFCC Definition of Risk: Road Traffic Collision Risk Map 11

10 Geographic disposition of risk – high and very high-risk incident types 12

11 Highlighted specific risks – Lithium-ion involved fires. 14

12 Geographic disposition of risk – high and very-high risk incident distribution by LFB station ground 15

13 Geographic disposition of demand and population density 16

2 Introduction, scope and approach

This is a data-led risk assessment using the most recent five calendar years of incident data on casualties, fatalities, type and location of incident and of demand on LFB resources. This layer highlights risks which are relatively common under normal requirements, with likelihood of incidents occurring forming a key metric. "Normal requirements," is a term used in the Fire and Rescue Services Act 2004 to describe the level of "personnel, services and equipment" that should be provided for firefighting and road traffic accidents. Less frequently occurring events which would cause significant harm or damage outside of normal requirements are considered in layer three.

Risk Matrices

In this layer incidents can score high for consequence on the risk matrices due to the number of resources that were deployed to an incident or because of the casualty rate of a given incident type. By having two metrics for consequence the approach captures incidents that have a relatively low resource draw but a high casualty rate, such as persons trapped in road traffic collisions, and incidents such as fires in rural areas that have a relatively low casualty rate but a high draw on resources. Both incident types present risk to the community of London in their own way.

This report includes two different risk matrices. The different presentations allow the same incident data to be viewed in different ways by different intended users. Risk is presented by location and building type in Risk Matrix 1. This is intended for users where the geography or location of a risk is important, for instance, understanding the distribution of risk between different property types or highlighting risks associated with rural areas. For users where the geography is less important, and it is the specific activity that is relevant, Risk Matrix 2 shows incident risk data by the LFB Incident Type Code (ITC). This presentation allows users to focus on incident types that have high casualty rates such as "C3 Acid attack on a person" that are less visible in the location-based data, as they are not constrained by building type or location and may occur anywhere.

Geographic disposition of risk

The Brigade uses methodology developed by the NFCC to highlight the geographic distribution of indicators for increased risk related to dwelling fires, non-dwelling building fires and road traffic collisions (RTC). Dwelling fire risk is calculated using correlation between demographic factors and fire risk to assign a geographical area with a fire risk rating. The approach uses national incident data and is developed by the NFCC. In this document the NFCC methodology using Lower Super Output Areas, (LSOAs) has been selected. This was chosen by LFB as sufficiently granular for understanding the distribution of dwelling fire risk pan-London.

A similar approach is used to map road traffic collision (RTC) risk but using features of the road network to correlate with risk rather than demographic factors.

The NFCC has developed a methodology for non-dwelling fire risk which remains unpublished. LFB has adopted the draft approach to understand the geographic distribution of non-dwelling building fire risk.

Because new census and index of multiple deprivation data sets have become available since the production of NFCC methodologies, where possible, LFB has replaced the original data sets with the most up to date available.

To aid understanding of geographic distribution of hazards other than fires and RTCs. LFB has used the highest scoring risks from risk matrix two and analyses the distribution of these pan-London at station ground resolution. This allows more granular understanding of the distribution of risks such as acid attacks, people collapsed behind locked doors and people in crisis.

Geographic disposition of demand.

LFB has developed an approach to illustrate where demand for services predominantly occur and where different types of risk proxy are concentrated. We term this approach, Neighbourhood Density Zones. These are broadly concentric zones of similar population density.

3 Objectives

The purpose of layer two is to:

- assess which property types and locations are associated with the most demand and most casualties under normal requirements.
- assess which specific incident types are associated with the most demand and most casualties under normal requirements.
- assess which property types and locations and which incident types, have the potential for the greatest local impacts and resourcing implications for LFB under normal requirements.
- inform prioritisation of resources based on current highest risks.

4 Limitations

Recent incident data does not account for rare or extreme events that have not occurred in the data capture period or may have never happened. These events are assessed in layer three.

Incident data is inherently backwards looking, it is a lagging indicator of risks that have already occurred. Horizon scanning for new and emerging risk and assessment of trends is presented in layer four.

Because incident data is a lagging indicator it may underrepresent rapidly changing risks where historic averages appear stable but key drivers have changed.

Data sources that record cause of fire and items most commonly involved in fire are not presented in this layer. These data are tracked and reported by LFB fire investigation and they are fed into layer four of this assessment where trends of increasing risk and demand are identified. This is why Lithium-ion or e-bike fires do not appear in this layer but are reflected in Layer four.

5 Key Findings

Risk likelihood and Severity

- Reduced risk from fires in houses and bungalows. Reductions are observed in the likelihood based on 5 years incident data.
- Fires in Purpose built flats remain the highest risk fire type and have not followed the downward trend in numbers of fires overall or in the reduced severity scores noted in other locations.
- The risk associated with fires in care homes have increased, driven by an increase in the severity score of the risk indicating a higher rate of casualties than in the past.
- Special service (non-fire) risks have increased across multiple location types
- B11, collapsed behind locked door incidents, and Persons Trapped RTCs remain the highest non-fire risk incidents from 2025
- B12 Incidents, persons threatening to jump has maintained the raised position noted in 2025 indicating a sustained increase in this risk.

Highlighted specific risks – Lithium-ion involved fires.

Lithium-ion battery fires, including those involving e-bikes and e-scooters, were identified in the Brigade's 2025 Assessment of Risk as an emerging risk, reflecting public and professional concerns about battery safety and the wider adoption of lithium-ion energy systems. The continued rise in incidents confirms this developing trend, although the overall number remains low relative to total fire activity in London. Where these incidents occur, they may intersect with existing vulnerability factors, particularly in domestic settings. Given the increasing use of lithium-ion powered transport and energy storage, the risk profile is expected to remain dynamic and will continue to be considered within the broader category of risks associated with new fuels and emerging technologies.

Geographic disposition of risk

The following high and very high-risk incident types are concentred in specific areas of London;

- Dwelling Fire Risk - Dwelling fire risk largely aligns with areas of most population density and with areas that align geographically with areas of higher multiple deprivation. There is a central risk disposition with spread and outlying pockets focussed on areas of development and density and deprivation.
- Road Traffic Collision - Road traffic collision risk is concentrated towards the periphery, most notably around arterial and ring roads entering and circling London.
- Non-Dwelling Building Fire – Is distributed more widely across London
- High risk incident type clusters. Paddington, Lambeth, Soho, Ilford, Tottenham, Dagenham, North Kensington, Plumstead, Poplar and Holloway station grounds are associated with clusters of high-risk incident types. Each of these geographic areas has a cluster of four or more individual high and very high-risk incident types that occur significantly more than the brigade wide average (two standard deviation above average).
- A1HR (Fires in high rise buildings) has a large central London bias with Paddington's station ground having a rate of more than five times the brigade wide average.

- B1T incident types, involving people under trains are concentrated centrally with Soho' station ground accounting for more than nine times the brigade wide average.

Geographic disposition of demand

Overall demand for services occurs primarily in areas of higher population density.

6 Risk Matrices

Incident risk matrices and trends in incident likelihood and severity for all incident types and locations can be viewed by LFB staff using this live report;

1. link: AoR data report
2. QR code

Power BI

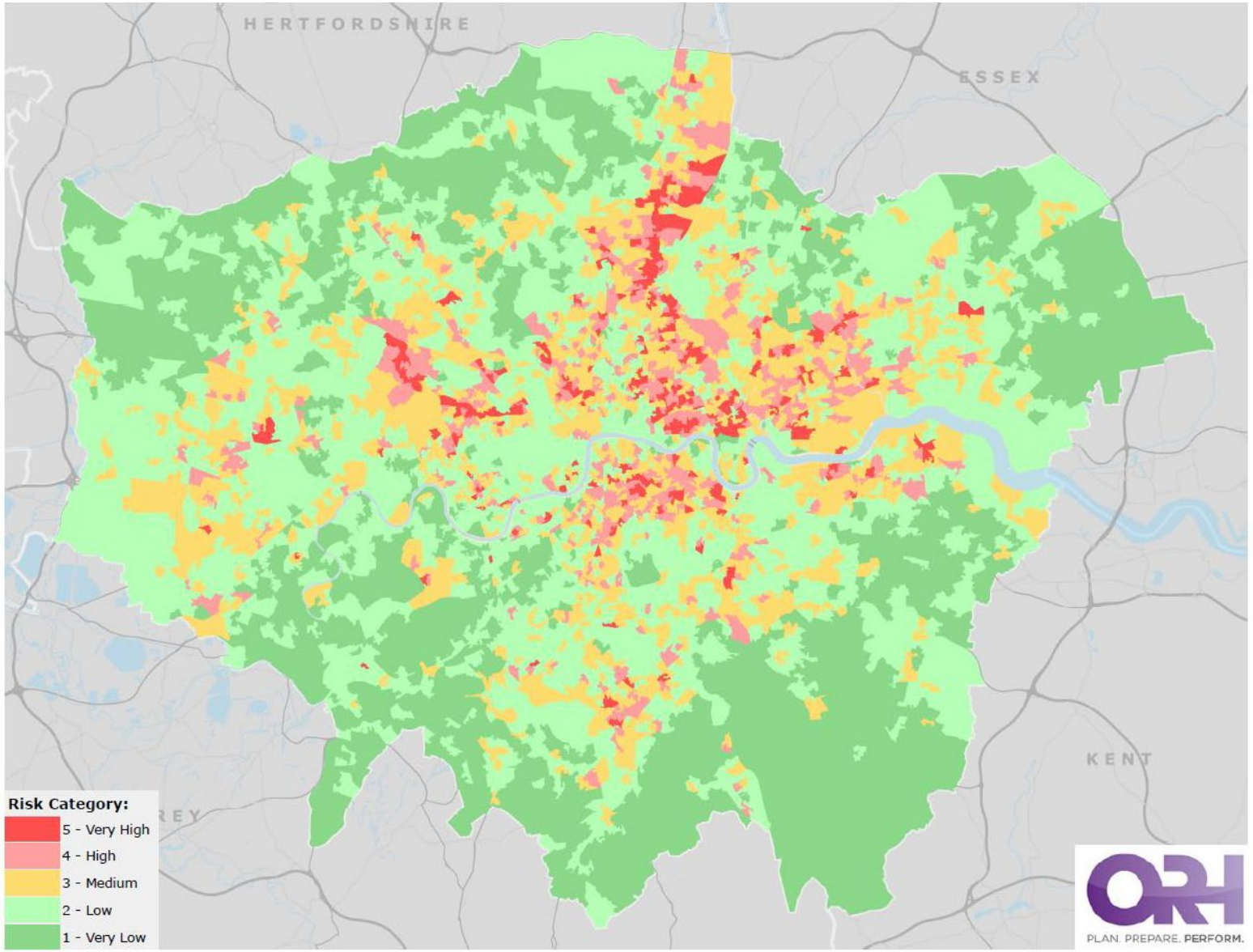
Risk Matrix One: Incident Risk by Type and Location

Severity Score						
	5	Fire - Other residential property Fire - Warehouses and bulk storage Non-Fire - Camping tent, shelter or marquee	Fire - Care and supported living Fire - Farming and agriculture Fire - Food and Drink Fire - Manufacturing and processing Fire - Retail Non-Fire - Boat Non-Fire - Outdoor water Non-Fire - Trains Non-Fire - Vegetation by road, track or canal	Fire - House or Bungalow Fire - Private garage, shed or outbuilding Non-Fire - Transport buildings	Fire - Purpose built flats	Non-Fire - Road Vehicle
	4	Fire - Boat Non-Fire - Static Caravan, Houseboat, towing caravan	Fire - Other non-residential property Fire - Public administration, utilities and amenities Fire - Short stay accommodation Non-Fire - Other residential property	Fire - Converted flats and HMOs Non-Fire - Rural land	Non-Fire - Urban infrastructure	Non-Fire - Converted flats and HMOs Non-Fire - House or Bungalow Non-Fire - Purpose built flats
	3	Fire - Aircraft Fire - Communal living Fire - Entertainment and culture	Fire - Hospitals and medical care Fire - Landfill or wasteland Non-Fire - Car park and transport Non-Fire - Farming and agriculture Non-Fire - Other non-residential property Non-Fire - Urban furnishings	Fire - Road Vehicle Fire - Rural land Fire - Urban infrastructure Non-Fire - Communal living Non-Fire - Entertainment and culture Non-Fire - Hospitals and medical care Non-Fire - Manufacturing and processing Non-Fire - Private garage, shed or outbuilding Non-Fire - Sports and leisure Non-Fire - Warehouses and bulk storage	Non-Fire - Education Non-Fire - Food and Drink Non-Fire - Offices and call centres Non-Fire - Retail Non-Fire - Short stay accommodation	Non-Fire - Care and supported living
	2	Fire - Camping tent, shelter or marquee Fire - Religious Fire - Sports and leisure Fire - Static Caravan, Houseboat, towing caravan	Fire - Education Fire - Offices and call centres Fire - Transport buildings Non-Fire - Aircraft	Non-Fire - Public administration, utilities and amenities	Fire - Refuse, rubbish or recycling	
	1	Fire - Barbeque Fire - Car park and transport Fire - Trains	Fire - Urban furnishings Fire - Vegetation by road, track or canal Non-Fire - Barbeque Non-Fire - False Alarm - Property not found Non-Fire - Landfill or wasteland Non-Fire - Religious	Non-Fire - Refuse, rubbish or recycling		
		1	2	3	4	5
		Likelihood Score Blank Risk Matrix				

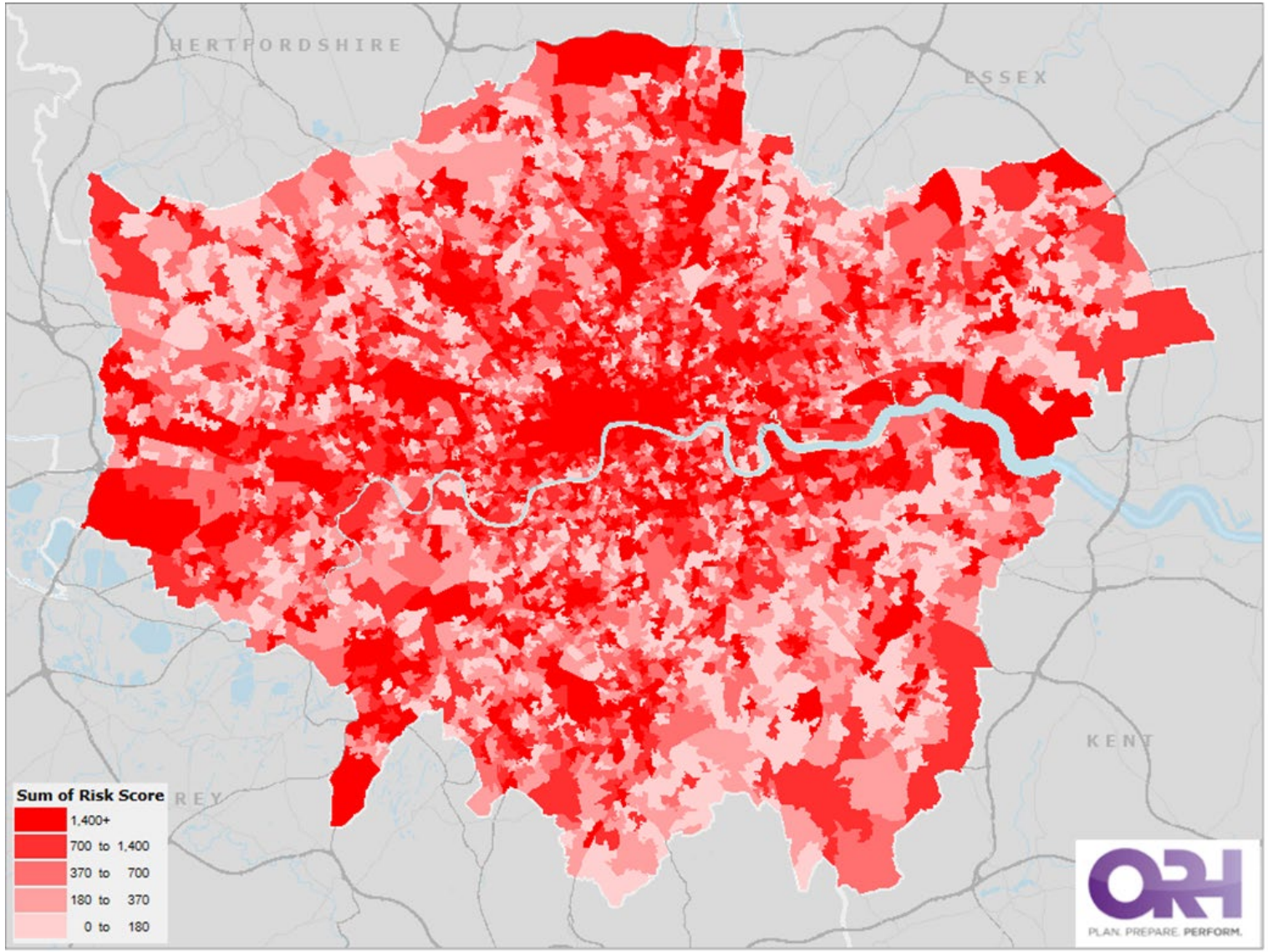
Risk Matrix Two: Incident Risk by Incident Type Code

Severity Score						
	5	AMB: Ambulance required for member of Brigade/staff/visitor B13: Serious Collision involving Brigade vehicle B14: Minor Collision involving Brigade vehicle B93: Collapse of Building/Structure (Level 3) - Persons involved E3: Aircraft Accident/Aircraft Accident Imminent ES5: Emergency Services Channel FSG: 1 or more FSG calls in any premise type G0: Operation PLATO - Nil attendance J8: Vehicle in Waterway accessible from land PERSON: Person on Fire - Out in the open	A4: Fire Involving HazMat - including cylinders B10: Person in Precarious Position requiring immediate rescue B1: Person Trapped (Not RTC) B1T: Person under Train/Tram C3: Acid Attack on Person G11: NILO Assessment - Nil attendance J0: FBT Running Call received from MCA J1: Midstream Incident on the Thames J3: Person/Animal in Waterway/on Foreshore RTC: ROAD TRAFFIC COLLISON VEHICLE: Vehicle fires -	B19: Assist Ambulance with Bariatric/Difficult removal of Patient C1: HazMat N0: Nil Attendance	A1HR: Fire in High Rise RTC Persons trapped	A1: Fire - including large vehicle fires B11: Person Collapsed or Injured behind locked door
	4	B7: Train/Tram Crash B92: Collapse of Bldg/Structure (Level 2) - No persons involved	A0: Tests / Exercises No attendance MULTI: Multi lane make safe - RTC	B12: Person Threatening to Jump or Assisting MPS with Persons at Height	B2: Reduced Special Service MAKE: Make safe - RTC	B3: Effecting Entry - Person Locked Out/In & Person Collapsed Behind Locked Door
	3	MA: Mutual Assistance	A3: Reduced Fire Attendance involving Railway/Tram property B0: No attendance recommended refer to Supvsr J12: Person Threatening to Jump from Bridge or Structure on the River Thames	A8: Fire all Out		A10: AFA Commercial Premises A11: AFA Residential Premises - for High Rise use A1HR A2: Reduced Fire Attendance - including electrical junction box B4: Flooding C5: Natural Gas Leak
	2	C4: Mercury Spill J2: Houseboat/Vessel Sinking/Flooded Accessible from land	A12: Siege/Person Threatening to set light to themselves or property B6: Burst Water Main E1: Aircraft Full Emergency/Ground Incident	C2: Fuel Spill up to 100 litres		
	1	A7: Fire on Vessel - accessible by land AFR: Alleged Fire Risk B17: Large Animal Rescue - Including if waterway involved C11S: HazMat - British Transport Police Support CNAT0: Mass Decontamination National Initial Call D1: Fire in Road/Rail Tunnel D3: Sub Surface incident FFEM: Firefighter Emergency G6: Op Hasani/Wide Area Search J4: HazMat incident on Thames J7: Fire on Vessel on Thames	AFA: ITC as per SECH flowchart B8: Commercial Flooding		B2E: Person Shut in Lift - Emergency B2NE: Person Shut in Lift - Non Emergency	
		1	2	3	4	5
		Likelihood Score Blank Risk Matrix				

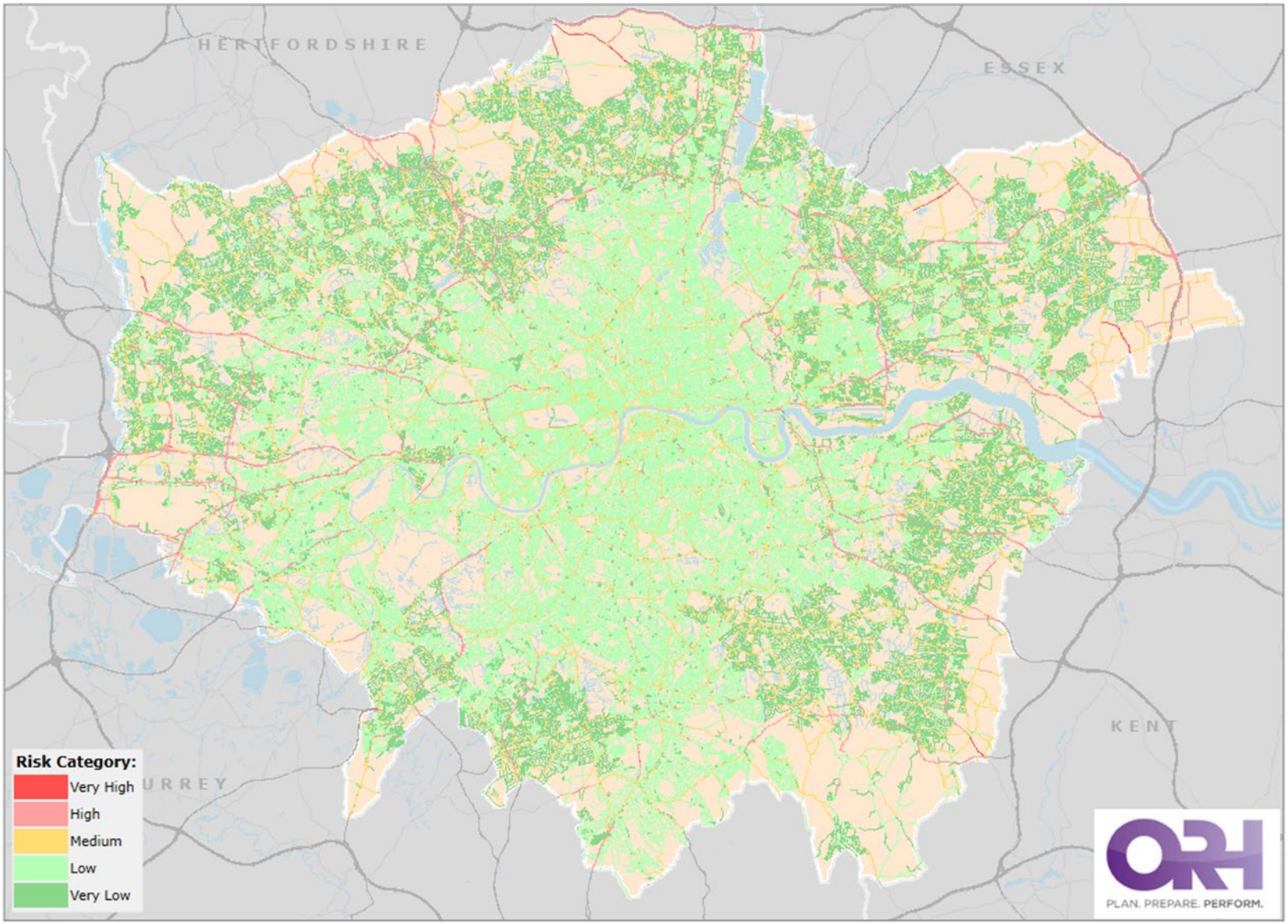
7 Geographic disposition of risk – NFCC Definition of Risk: Dwelling Fire Risk Map



8 Geographic disposition of Risk - Non-Dwelling Building Fire



9 Geographic disposition of risk – NFCC Definition of Risk: Road Traffic Collision Risk Map



10 Geographic disposition of risk – high and very high-risk incident types

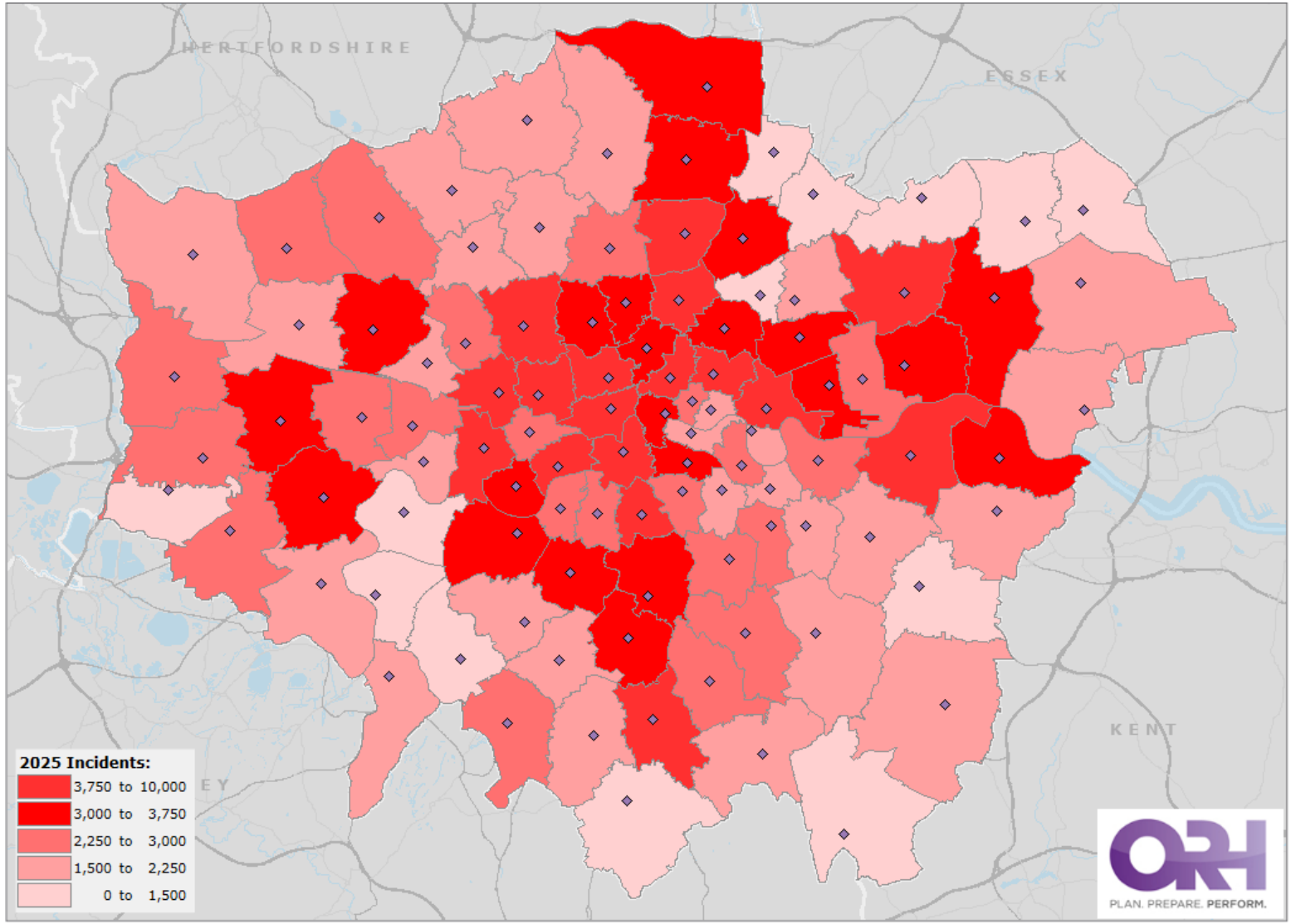
High and Very High-risk incident types		**Geographic distribution** >2xStandard deviation from brigade wide average
• A1: Fire - including large vehicle fires	Very High	North Kensington, Tottenham, Plumstead, Paddington, Dagenham
• B11: Person Collapsed or Injured behind locked door when called by LAS or MPS	Very High	Tottenham, Paddington, Dagenham
• A1HR: Fire in High Rise Flats/Commercial Buildings - 6 flrs & above	Very High	Paddington, Poplar, Lambeth, Shoreditch
• B3: Effecting Entry - Person Locked Out/In & Person Collapsed Behind Locked Door	Very High	Stoke Newington, North Kensington, Tottenham, Holloway
• PERSONS: Persons trapped - RTC	Very High	Croydon, Enfield, Hayes, Heathrow, Orpington
• B2: Reduced Special Service - including ceiling plaster/trees/roof tiles/bldg fascia/aerials etc in precarious position & person collapsed or injured in street etc.	Very High	Paddington, Hammersmith, Soho
• MAKE: Make safe - RTC	Very High	Croydon, Ilford, Southgate, Stanmore
• B19: Assist Ambulance with Bariatric/Difficult removal of Patient	Very High	Barking, Plumstead, West Norwood, Woodside
• C1: HazMat - including cylinders/refrigerant leaking/Fuel Spill over 100 litres - inside or outside	Very High	Lambeth, Paddington, Lewisham
• B12: Person Threatening to Jump or Assisting MPS with Persons at Height	Very High	Ilford, Poplar, Lambeth, Euston
• A4: Fire Involving HazMat - including cylinders and explosions	Very High	Tottenham, Southall, Plumstead, Old Kent Road, Ilford, Dagenham, Bethnal green
• B1: Person Trapped (Not RTC)	Very High	Soho, Tooting, Stoke Newington, Erith,
• B10: Person in Precarious Position requiring immediate rescue	Very High	Soho, Tooting, Holloway,
• B1T: Person under Train/Tram or Person Struck by Train/Tram	Very High	Soho, Paddington, Lambeth, Holloway, Euston

• C3: Acid Attack on Person	Very High	Orpington, West Hampstead, Willesden, Stratford, Lambeth, Fulham
• J1: Midstream Incident on the Thames	Very High	Lambeth, Dowgate, Twickenham, Soho, Dockhead
• J3: Person/Animal in Waterway/on Foreshore	Very High	Poplar, Lambeth, Dockhead, Stratford, Millwall
• VEHICLE: Vehicle fires - Small/Large & Incidents involving vehicles	Very High	N/A
• MULTI: Multi lane make safe - RTC	High	Hayes, Enfield, Poplar, Hendon, Ilford, Mill Hill, Barking
• B93: Collapse of Building/Structure (Level 3) - Persons involved	High	N/A
• E3: Aircraft Accident/Aircraft Accident Imminent	High	Hillingdon
• FSG: 1 or more FSG calls in any premise type	High	N/A
• J8: Vehicle in Waterway accessible from land	High	Chiswick, Hillingdon
• PERSON: Person on Fire - Out in the open	High	Paddington
• A10: AFA Commercial Premises	High	Soho, Euston, Dowgate
• A11: AFA Residential Premises - for High Rise use A1HR	High	Paddington, Chelsea, Hammersmith, North Kensington, Euston, West Hampstead
• A2: Reduced Fire Attendance - including electrical junction box	High	Dagenham, Soho, Wennington, Orpington, Ilford, Plumstead
• B4: Flooding	High	Bethnal Green, Paddington, North Kensington, Lambeth, Stoke Newington, Tottenham
• C5: Natural Gas Leak - commercial or residential	High	Paddington, Stoke Newington, Tottenham

11 Highlighted specific risks – Lithium-ion involved fires.

Lithium-ion battery fires, including those involving e-bikes and e-scooters, were identified in the Brigade's 2025 Assessment of Risk as an emerging risk, reflecting public and professional concerns about battery safety and the wider adoption of lithium-ion energy systems. The continued rise in incidents confirms this developing trend, although the overall number remains low relative to total fire activity in London. Where these incidents occur, they may intersect with existing vulnerability factors, particularly in domestic settings. Given the increasing use of lithium-ion powered transport and energy storage, the risk profile is expected to remain dynamic and will continue to be considered within the broader category of risks associated with new fuels and emerging technologies.

12 Geographic disposition of risk – high and very-high risk incident distribution by LFB station ground



13 Geographic disposition of demand and population density

Population density by LFB, "density zone"	2025 all incidents overlay on density zone base map.

