



HEREFORD & WORCESTER  
**HWFR**  
FIRE AND RESCUE SERVICE



# Service Definitions of Risk

## Other Building Fire Risk



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# Introduction

The National Fire Chiefs Council, in partnership with Operational Research in Health (ORH), has proposed an initial risk assessment framework for fires occurring in non-residential buildings or 'Other Building Fires' (OBF). This initiative is a segment of a broader scheme to identify and govern communal hazards. The overall objective as defined by NFCC is:

"to deliver an evidence-based and consistent methodology for determining 'level of risk' that also provides a national benchmarking capability".

NFCC have also produced a national definition of risk: "A combination of the likelihood and consequences of hazardous events" which is utilised throughout the risk methodologies, including this one.

NFCC/ORH categorised the 1,935,931 properties contained in Ordinance Survey data into 23 categories. They then analysed the likelihood of OBFs in terms of the total number, relative proportions and annual rates per 1,000 buildings in each of these 23 building categories.

In the Domestic Dwelling Fires methodology, there were separate measures for the consequence in terms of life and property impacts. Following initial analysis of OBFs, NFCC/ORH determined that it was more appropriate to draw together a combined measure of measured consequence, based on a variety of data outcomes from the IRS data. A range of fields were considered before settling on a list of six key data points:

- Fire Damage Extent (square metres)
- Fire Spread Description

**Property  
Impacts**

- Evacuations Assisted by FRS
- Fatalities, Casualties
- Victim Severity

**Life  
Impacts**

- Number of FRS Vehicles Attending

**FRS  
Impact**

## Introduction continued

As per Phase 1 of the Definition of Risk project, risk is considered to be the product of likelihood and consequence. To determine an overall risk for OBFs in each building category, it was first necessary to translate the raw analysis into a score out of ten for both likelihood and measured consequence.

### Likelihood

A relative score from 1 to 9, directly aligned to the annual rate by category, with prisons and hospitals given a score of 10 as outliers.

X

### Measured Consequence

A relative score from 1 to 10 based on the proportion of H/M/L incidents vs. all building categories, weighted 10/1/0.

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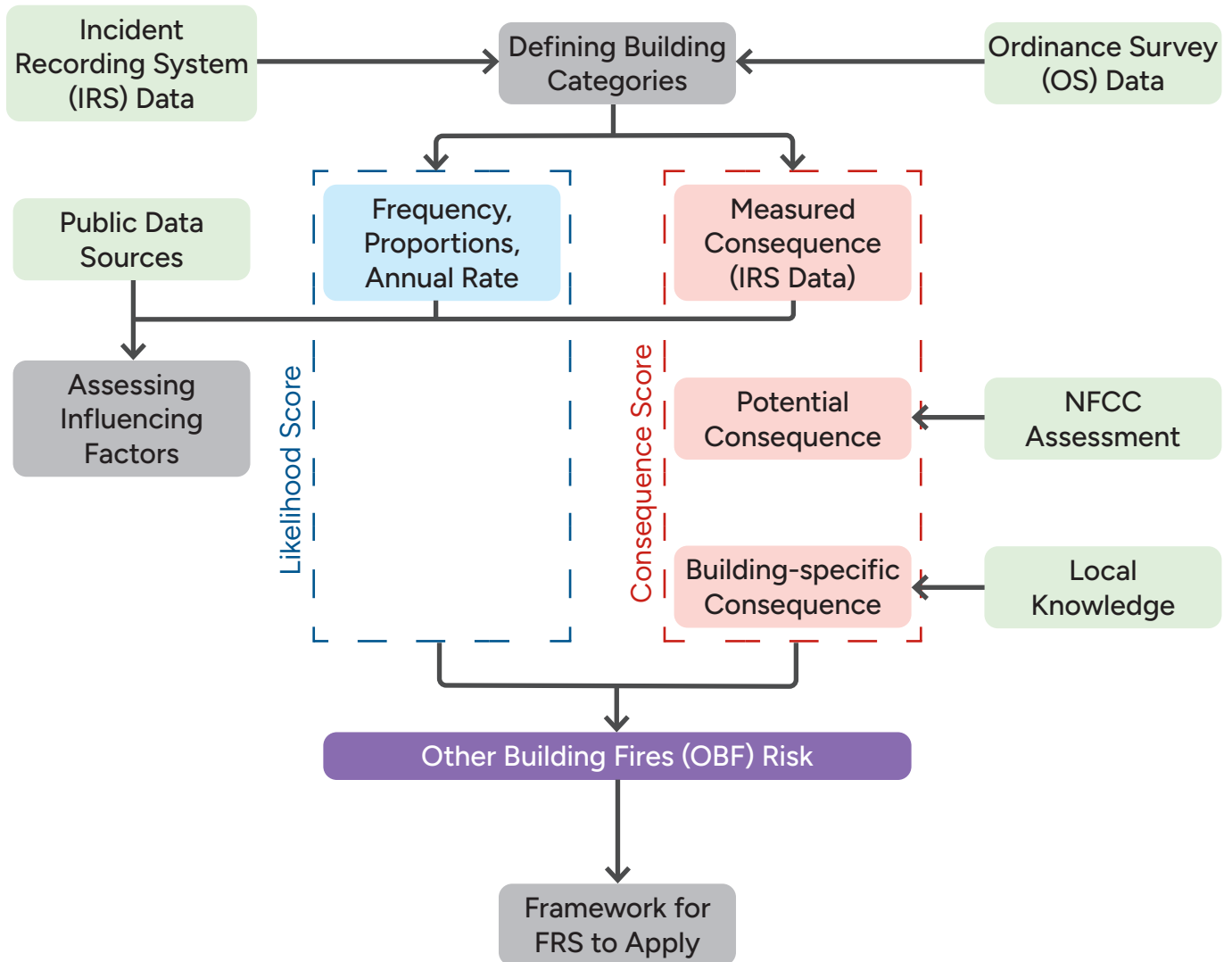
### Risk Score

The two values are then multiplied together (equally weighted) to give a risk score (potentially ranging from 1 to 100) for all building categories.

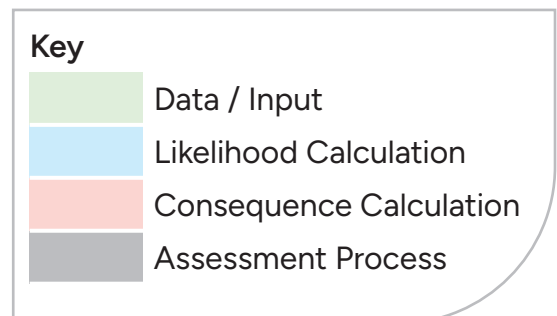
In a significant stride towards this goal, the Service has adopted the NFCC's [National Risk Methodology for UK FRS: Other Building Fires \(2023\)](#). This methodology scrutinises non-residential buildings by leveraging the Ordnance Survey's Address Base Plus data, and meticulously analyses specific factors that are closely linked to an increased risk of fire.

# Introduction continued

## Overview of Other Building Fires (OBF) Methodology



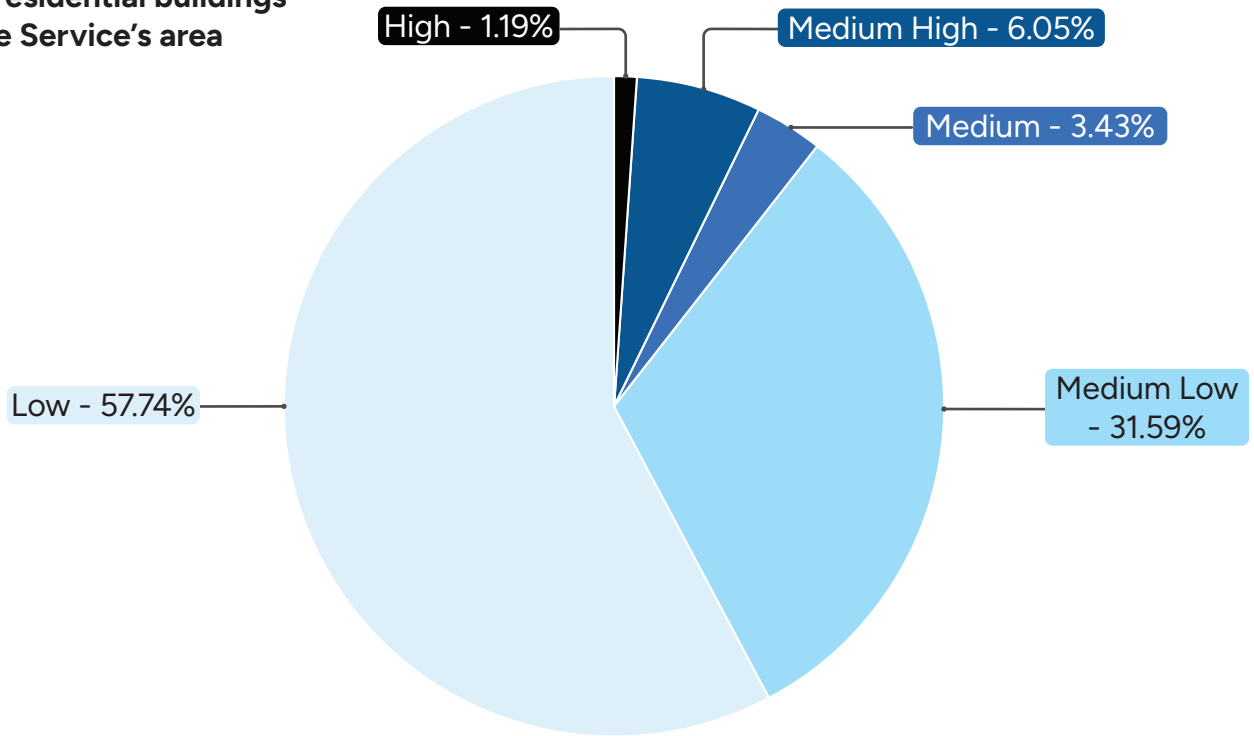
These elements encompass the type of building, the historical frequency of fire occurrences, the number of injuries sustained, and the broader impact of fires on society, including effects on firefighters, the community, cultural heritage, and the environment. The culmination of this process is a composite risk score that merges the probability of a fire breaking out with the potential severity of its consequences on human life, assigning one of five distinct risk levels to each building.



# Data Summary

Overall, 36,975 non-residential properties were identified in the Service’s operational area. More than a half of them were classified as low fire risk, with almost 90% falling into the low and medium low categories combined. High and Medium high-risk properties were found to constitute only 7.24% of the total (Figure 1).

**Figure 1: Fire risk level of non-residential buildings at the Service’s area**

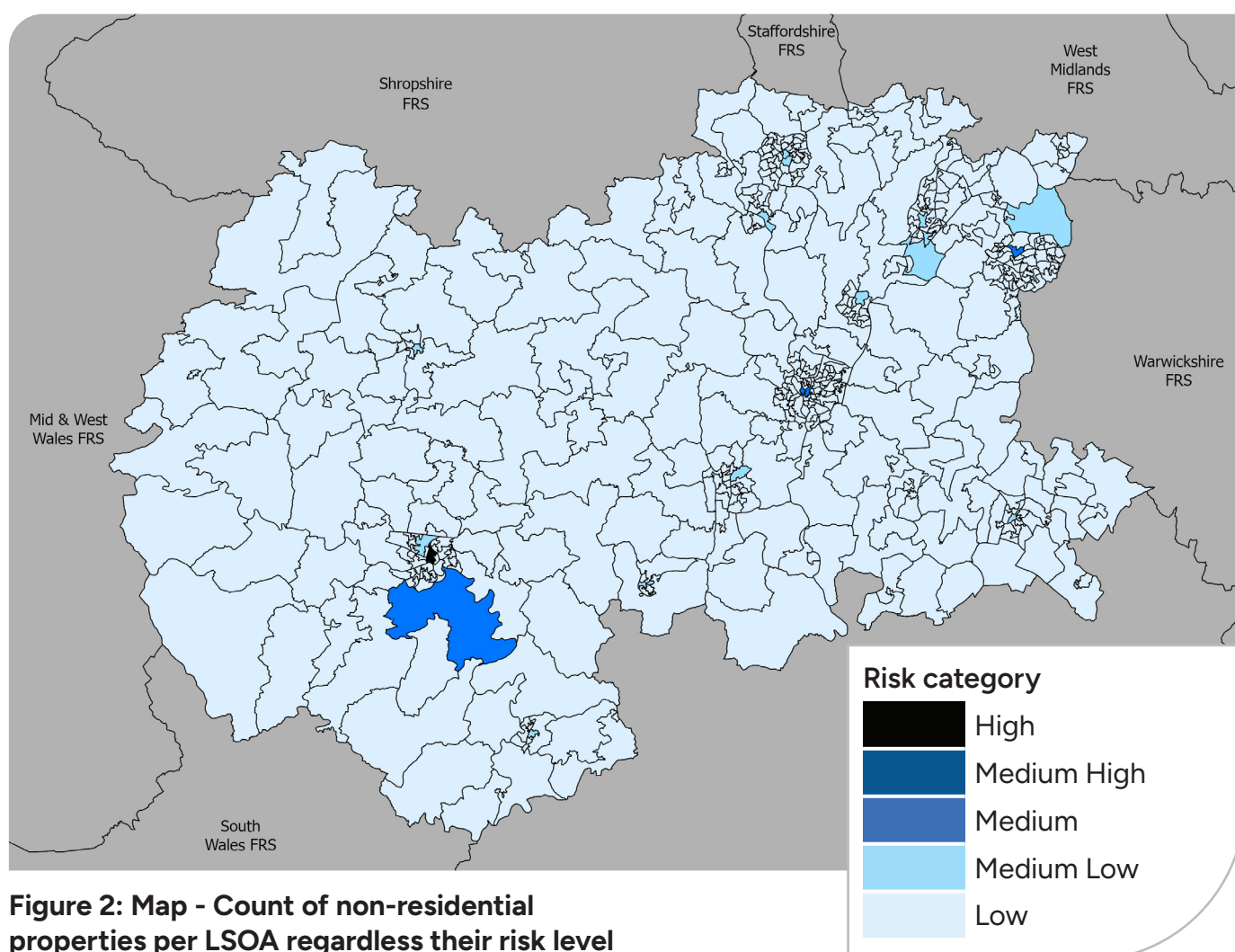


More detailed property classification with associated risk level is given in the Table 1 below:

Building category	Risk level	Number of buildings	%
Light Industrial or Storage	Medium low	8,632	23.34%
Shop	Low	7,335	19.84%
Office	Low	6,464	17.48%
Other Workplace	Low	3,684	9.96%
Other Sleeping Accommodation	Medium low	1,943	5.25%
HMO	Medium high	1,925	5.21%
Public Buildings	Low	1,757	4.75%
Leisure	Low	951	2.57%
Restaurant/Other	Low	764	2.07%
Bar/Pub	Medium low	696	1.88%
Factory or Manufacturing	Medium	601	1.63%

## Data Summary continued

Building category	Risk level	Number of buildings	%
Medical	Low	395	1.07%
Care Home	High	392	1.06%
Primary School	Medium	333	0.90%
Residential Education	Medium high	312	0.84%
Nursery / Special Needs	Medium low	259	0.70%
Secondary School	Medium	203	0.55%
Hotel	Medium	130	0.35%
Waste and Recycling	Medium low	77	0.21%
Further Education	Medium low	75	0.20%
Hospital	High	44	0.12%
Prison	High	3	0.01%
		<b>36,975</b>	<b>100.00%</b>



## Data Summary continued

The Figure 2 above provides a visual representation of the varying number of non-residential buildings across specific Lower Super Output Areas (LSOAs) when divided into five equal groups, and regardless of their assessed risk level. This approach allowed identifying 19 LSOAs (3.87% of the total Service's area) with an increased number of these type of buildings (Table 2):

Lower Super Output Area Name	Number of properties	%
Herefordshire 012C	1,515	4.10%
Redditch 004A	731	1.98%
Herefordshire 021A	661	1.79%
Worcester 011E	653	1.77%
Worcester 007F	612	1.66%
Bromsgrove 014H	579	1.57%
Wyre Forest 013B	523	1.41%
Wyre Forest 004E	497	1.34%
Herefordshire 003D	484	1.31%
Wychavon 014D	483	1.31%
Bromsgrove 011A	445	1.20%
Herefordshire 010B	434	1.17%
Bromsgrove 009B	384	1.04%
Malvern Hills 004C	379	1.02%
Herefordshire 022B	371	1.00%
Bromsgrove 013F	365	0.99%
Wychavon 003A	362	0.98%
Herefordshire 019A	323	0.87%
Wyre Forest 004F	308	0.83%
<b>Percentage of non-residential buildings per Lower Super Output Area:</b>	<b>10,109</b>	<b>27.34%</b>

The remaining Lower Super Output Areas encompass between zero and 303 non-residential properties each, collectively representing 72.66% of the total non-residential buildings.



## Data Summary continued

Table 3.

Building category	Lower Super Output Area Name	The greatest number of properties within LSOA	%	Total
Secondary School	Bromsgrove 011A	29	14.29%	203
Bar/Pub	Herefordshire 012C	32	4.60%	696
Care Home	Herefordshire 012C	16	4.08%	392
Hotel	Herefordshire 012C	6	4.62%	130
Leisure	Herefordshire 012C	33	3.47%	951
Medical	Herefordshire 012C	22	5.57%	395
Office	Herefordshire 012C	338	5.23%	6,464
Primary School	Herefordshire 012C	5	1.50%	333
Public Buildings	Herefordshire 012C	68	3.87%	1,757
Residential Education	Herefordshire 012C	180	57.69%	312
Restaurant/Other	Herefordshire 012C	85	11.13%	764
Shop	Herefordshire 012C	500	6.82%	7,335
Hospital	Herefordshire 012D	3	6.82%	44
HMO	Herefordshire 013B	141	7.32%	1,925
Nursery / Special Needs	Herefordshire 015E	7	2.70%	259
Other Sleeping Accommodation	Herefordshire 020C	72	3.71%	1,943
Factory or Manufacturing	Herefordshire 021A	47	7.82%	601
Light Industrial or Storage	Herefordshire 021A	357	4.14%	8,632
Waste and Recycling	Herefordshire 021A	8	10.39%	77
Other Workplace	Malvern Hills 004C	101	2.74%	3,684
Further Education	Wychavon 017B	11	14.67%	75
Prison	Wychavon 011D	1	33.33%	3
	Bromsgrove 014E			
	Bromsgrove 014G			
<b>The greatest number of specific building category within a single LSOA.</b>		<b>2,062</b>	<b>5.58%</b>	<b>36,975</b>



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