



# RISK ANALYSIS

CRMP 2025-28



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# Introduction

To support the development of the Community Risk Management Plan (CRMP) 2025-29 this document summarises the detailed data analysis and provides an evidence base to support further resource and capability reviews. These reviews will determine where further resources could be directed, and for what effect, thus allowing us to make appropriate provision for fire prevention and protection activities and response to fire and rescue related incidents.

# Methodology

This document describes how we understand the range of foreseeable fire and rescue service related risks as they relate to the community of Shropshire and uses the following hazard identification and risk analysis methodology as set out by the NFCC.

In preparing our CRMP we have used the NFCC Community Risk Management Planning Strategic Framework. This has provided the structure of our approach to risk namely, that we have approached the process by considering the hazards to the communities of Shropshire and identified those which present the greatest risk.



## Hazard identification

Hazard identification aims to find and describe hazardous events that might prevent, or help, Shropshire Fire and Rescue Service (SFRS) achieve its community risk management objectives and provide insight into how it will deploy its resources. This involves the identification of the following:

- Hazards – potential sources of harm
- Hazardous events – potential events that can cause harm
- Risk groups – people or assets that could be harmed

The key elements under this component include the following:

- Identification and assessment of all identifiable potential hazards that the CRMP process needs to address, together with their potential for harm.
- Detailed cataloguing of all potential hazards or hazardous events.
- An assessment of the potential level of severity of impact from these hazards and their resulting hazardous events.
- Identification of the places or risk groups that are most at risk of harm from these hazards.

## Risk Analysis

Risk analysis is the element of the CRMP process where the risk level of an identified hazard or hazardous event is determined.

The sources and causes of the hazardous events generated during hazard identification have been considered, together with their consequences, and the Likelihood of those consequences occurring.

This involves developing an understanding of each hazardous event, including the effectiveness of current risk mitigation and risk reduction activities. This will generate the 'risk rating'. This is compared with the risk criteria defined as part of CRMP scope, to identify whether additional mitigation and reduction activities are needed.

The risk assessment will inform priorities for improvements to, and/or adjustments to, mitigation and reduction activities and the associated deployment of resources, as set out in the **capability and resource reviews**.

The risk assessment comprises an appreciation of the following:

1. The sources and causes that lead to the hazardous events.
2. The consequences that could occur (expressed in terms of the objectives), along with their nature and magnitude.

3. The associated Likelihood of those consequences occurring.
4. The effectiveness of the mitigation and reduction activities that are already in place.
5. The overall risk level once the nature of the hazardous events and their potential impacts are measured against the effectiveness of mitigation and reduction activities already in place or proposed mitigation and reduction activities.
6. Where further resources could be directed, and for what effect
7. Uncertainty in any of the above.

**Risk groups are relevant throughout the assessment, defined as the people or assets that could be harmed by hazards, and that SFRS aims to protect.**

## Six Risk Groups

Risk groups are sets of people or assets that are exposed to the risk and might be harmed. The NFCC has defined six groups relevant to community risks:



These are defined as follows:

**Individual Risk Group** comprises an individual or small group of individuals within a single dwelling or location who have the potential for death or injury from the identified hazard.

**Societal Risk Group** refers to the potential for multiple injuries or fatalities emerging from the identified hazards.

**Emergency Responder Risk Group** refers to the Emergency Responder risk of death or injury due to the hazardous items or processes present in a location, the complexity of layout, or when they are unable to use their normal safe systems of work and require an adapted response.

**Environmental Risk Group** covers the potential for a hazardous event to negatively impact the environment in the immediate or wider vicinity.

**Heritage Risk Group** comprises premises or sites of heritage value that have the potential for partial or total loss of items or structures. Our historic environment enriches our quality of life and **contributes to local character** and a sense of place, this is of special importance nationally or may even be important internationally.

**Community Risk Group** is the potential for a hazardous event to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of well-being, mental health, financial position, loss of critical public services, social interaction, political and media impact etc. e.g., loss of a school or hospital, loss of a major local employer or interruption of unique or critical business to the UK economy/society.

The **Risk Analysis** considers the likelihood and consequence of hazardous events on each group and combines them to form risk metrics appropriate for each. There is a separate risk criterion for each group.

The **risk rating** is a way of measuring the risk level from Very Low to Very High, this assists with subsequent relative weighting and response prioritisation by combining the likelihood and consequence elements of risk. This risk rating refers to an individual risk, the average risk for individuals within the specific groups; emergency responder and individual (as defined in the risk groups above).

## The County of Shropshire

Shropshire comprises 2 Unitary Authorities: Shropshire, Telford and Wrekin. These authorities are responsible for providing local government services within Shropshire including, through the Shropshire and Wrekin Fire Authority, Shropshire Fire and Rescue Service (SFRS).

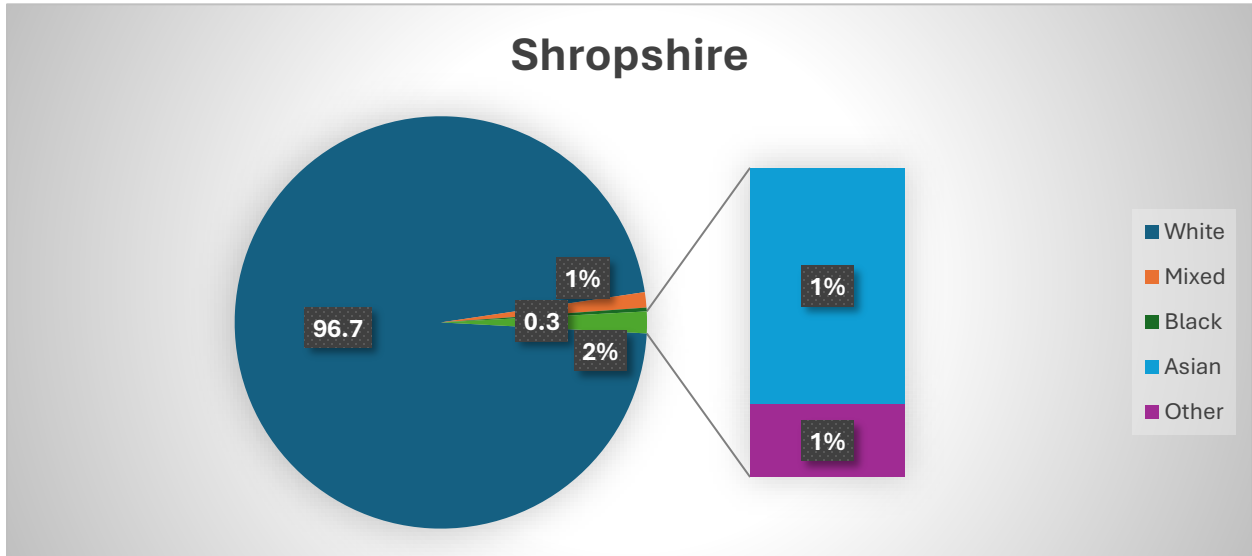
Shropshire borders the counties of Wrexham County Borough and Cheshire to the north, Staffordshire to the east, Worcestershire to the south-east, Herefordshire to the south and Powys to the west.

According to the [2021 Census](#) the county of Shropshire had a combined population of over 509,000 people, with 185,500 living within Telford and the remaining 323,600 in Shropshire.

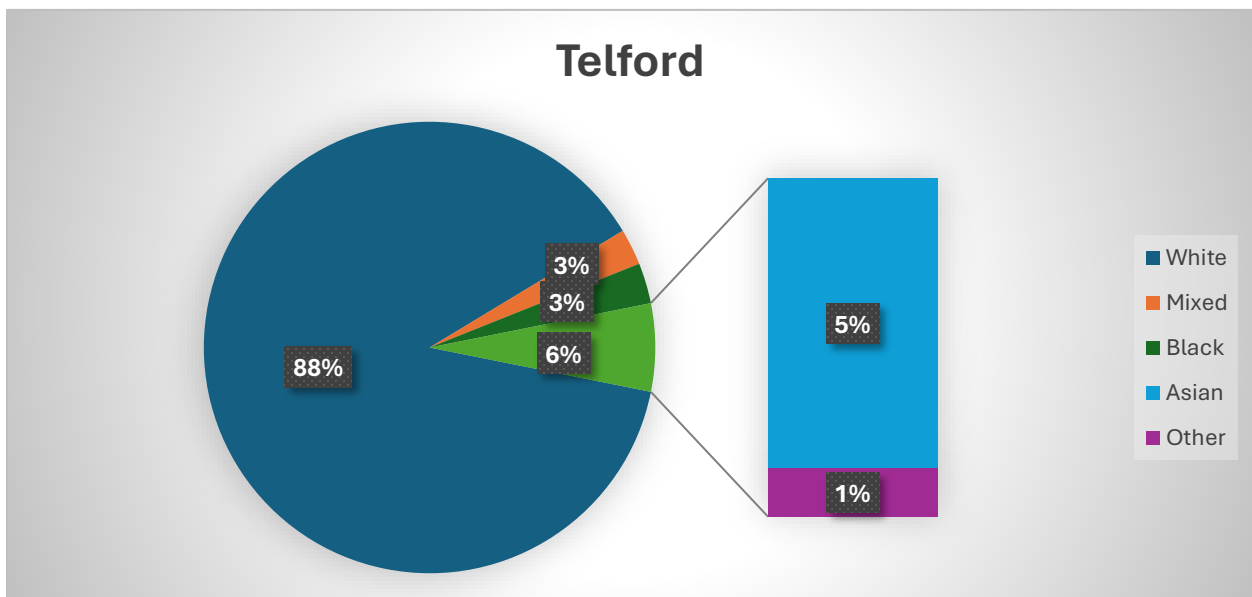
The county has an average population density of 143 people per square kilometre (370 people per square mile) and is one of England's most rural and sparsely populated counties. As a contrast, London has 5,598 people per square kilometre (14,500 people per square mile). Approximately half the population live in two main urban areas – Shrewsbury and Telford, whilst the remaining people inhabit its 13 towns, villages and hamlets meaning urban population centres represent higher risk areas for Fire and Rescue Services; however, rurality and isolation present their own challenges.



Shropshire deviates from the national average in terms of ethnicity makeup with 96.7% of its occupants being white, 1.3% Asian, 1.2% of mixed race and 0.3% black.



Telford aligns itself slightly closer to the national average, being slightly more ethnically diverse than Shropshire with 88.2% of its residents being white, 5.4% being Asian, 2.9% being black and 2.6% of mixed race.



In Telford and Wrekin, the percentage of people who did not identify with at least one UK national identity (English, Welsh, Scottish, Northern Irish or British) increased from 4.2% in 2011 to 7.2% in 2021. During the same period, the percentage in nearby Shropshire increased from 2.7% to 3.6%.

0.9% of Shropshire residents identified with a UK and non-UK national identity, compared with 1.1% of Telford residents. The percentage of residents in Shropshire that identified as "British only" increased from 15.7% to 55.8% from 2011 to 2021 likened to Telford which grew to 55.7% from 15.2%.

It's worth bearing in mind that In Census 2021, "British" was moved to the top response option and this may have influenced how people described their national identity.

Between the 2011 and 2021 censuses, the average (median) age of Shropshire residents increased by four years from 44 to 48 years of age. This area had a higher average (median) age than the West Midlands in 2021 (40 years) and a higher average (median) age than England (40 years).

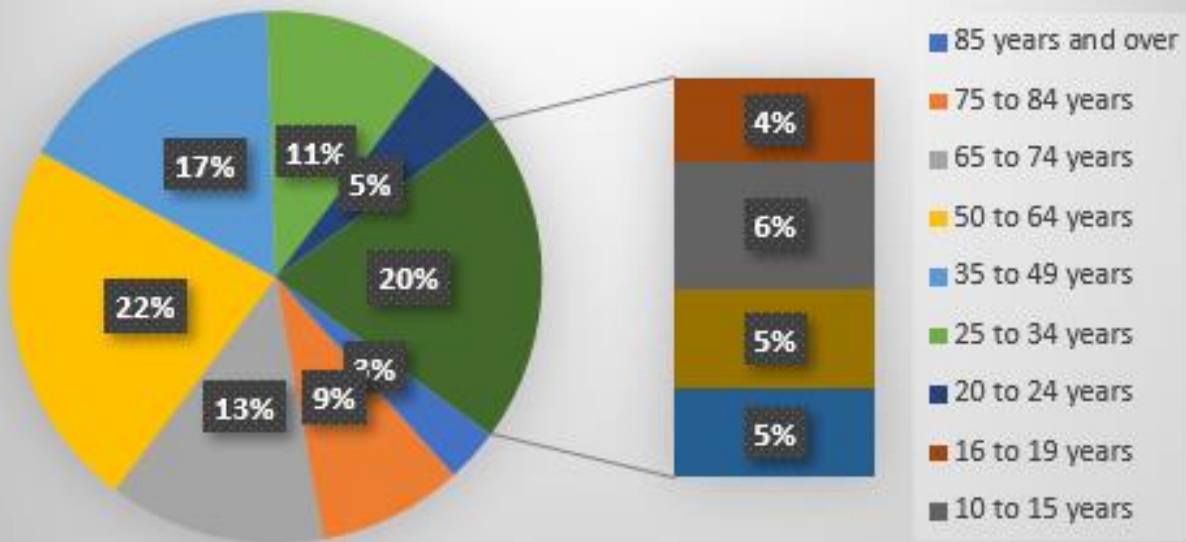
The number of people aged 50 to 64 years rose by just over 9,300 (an increase of 14.7%), while the number of residents between 35 and 49 years fell by around 9,600 (15.1% decrease). The share of residents aged between 50 and 64 years increased by 1.8 percentage points between the 2011 and 2021 censuses.

The census data shows that the average (median) age of Telford and Wrekin increased by only one year, from 38 to 39 years of age.

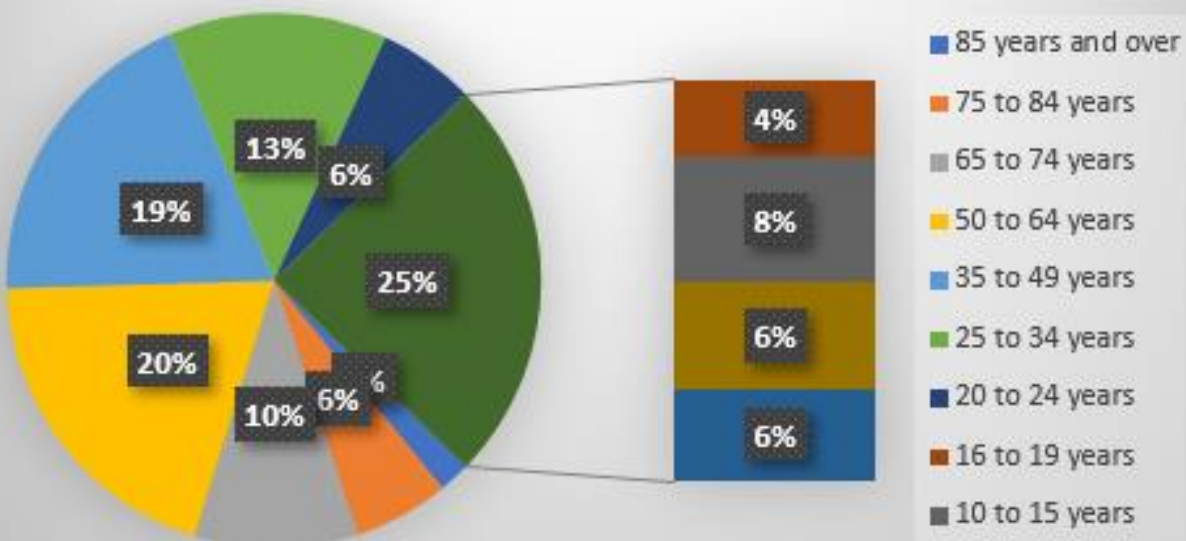
This area had a slightly lower average (median) age than the West Midlands in 2021 (40 years) and a slightly lower average (median) age than England (40 years).

The number of people aged 50 to 64 years rose by around 6,100 (an increase of 20.0%), while the number of residents between 35 and 49 years fell by just under 1,300 (3.4% decrease). The share of residents aged between 50 and 64 years increased by 1.4 percentage points between 2011 and 2021 censuses.

## Shropshire



## Telford



## The Indices of Deprivation 2019

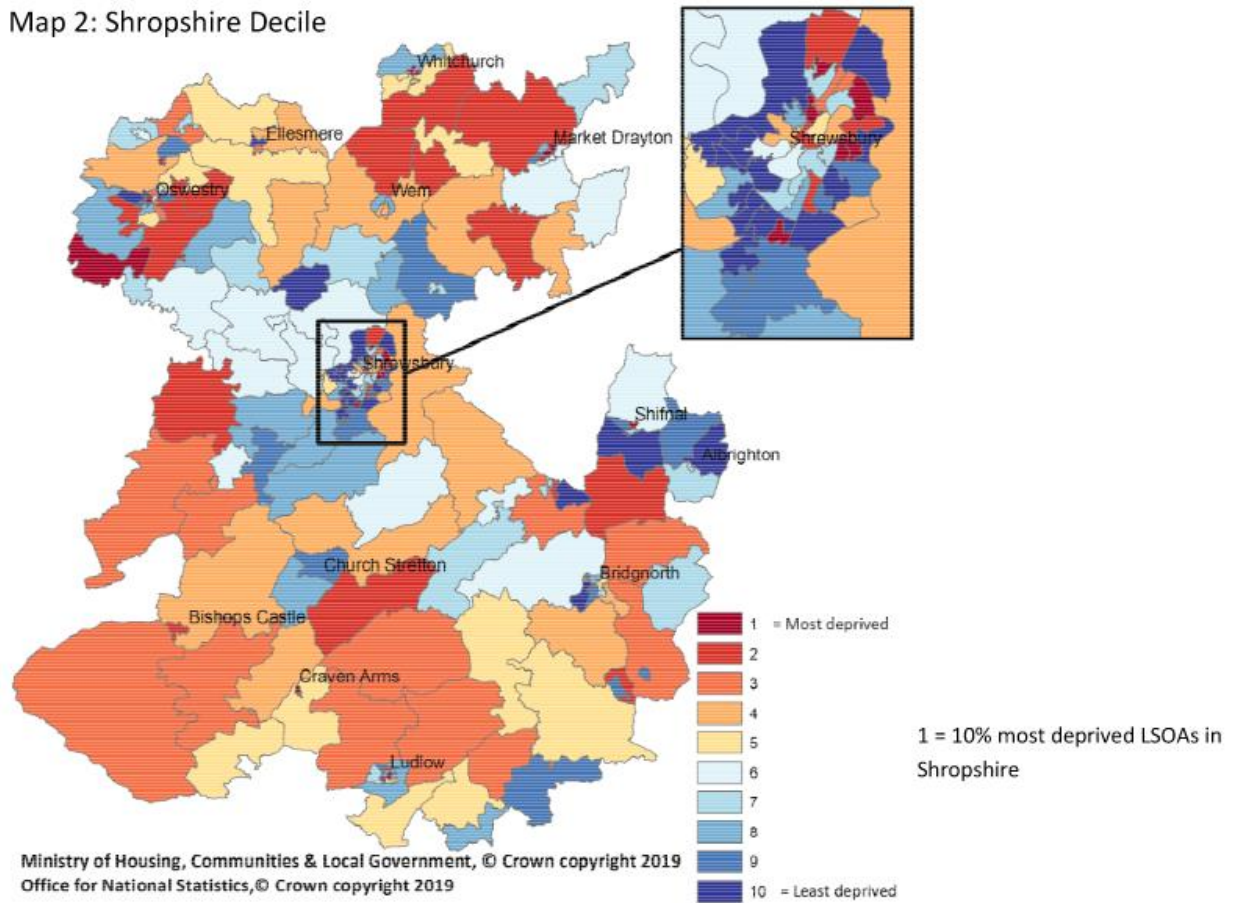
The Indices of Deprivation 2019 provide a set of relative measures of deprivation for small areas (Lower-layer Super Output Areas) across England, based on seven different domains of deprivation:

- Income Deprivation
- Employment Deprivation
- Education, Skills and Training Deprivation
- Health Deprivation and Disability
- Crime
- Barriers to Housing and Services
- Living Environment Deprivation

In 2019 Shropshire has an average score of 17.15 and is ranked 174th most deprived local authority in England out of a total of 317 lower tier authorities (rank of average score) where a rank of 1 = more deprivation. This compares to a rank of 185 out of 326 local authorities in 2015 (with a score of 16.68) and indicates that overall deprivation in Shropshire has increased slightly when comparing it against all LSOAs within England.

The map below shows the Shropshire Decile for each LSOA and compares IMD Overall in each LSOA against IMD Overall in all Shropshire LSOA's.

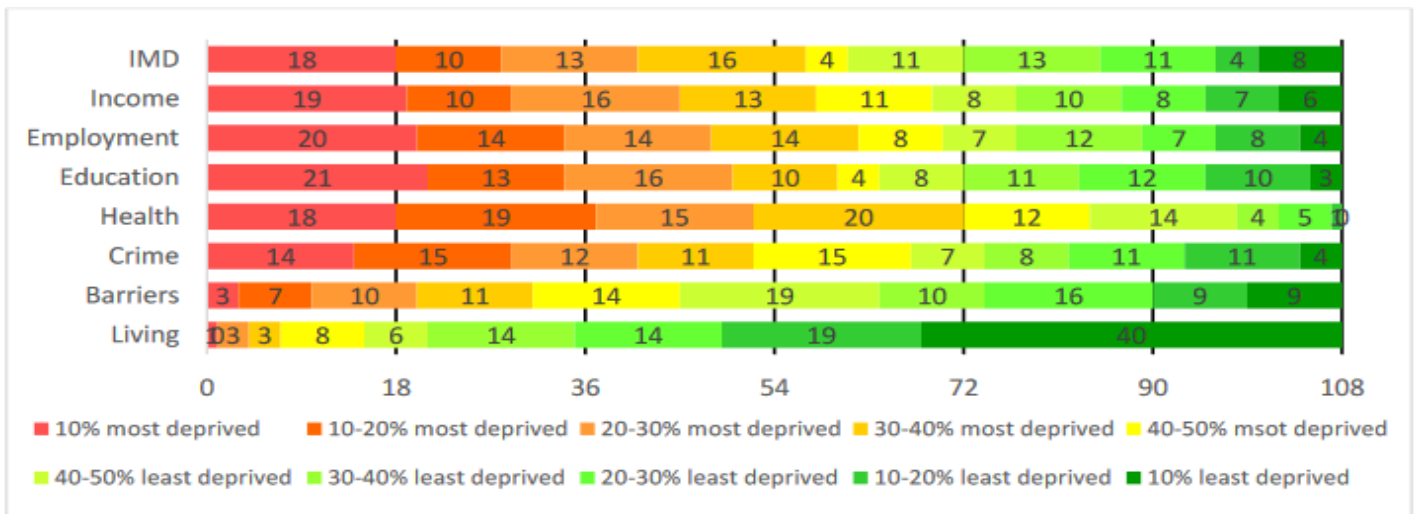
Map 2: Shropshire Decile



Telford and Wrekin does not rank in the 10% most deprived of upper tier authorities for any measure. The lowest rank is for the measure LSOAs in the most deprived 10% nationally within the education domain where the borough is ranked in the 10-20% most deprived.

Across the measures for the overall Index of Multiple Deprivation, Telford and Wrekin rank from 20-30% most deprived to 40-50% most deprived.

There are varying levels of deprivation in small areas of the Borough across the seven domains as seen in the chart below

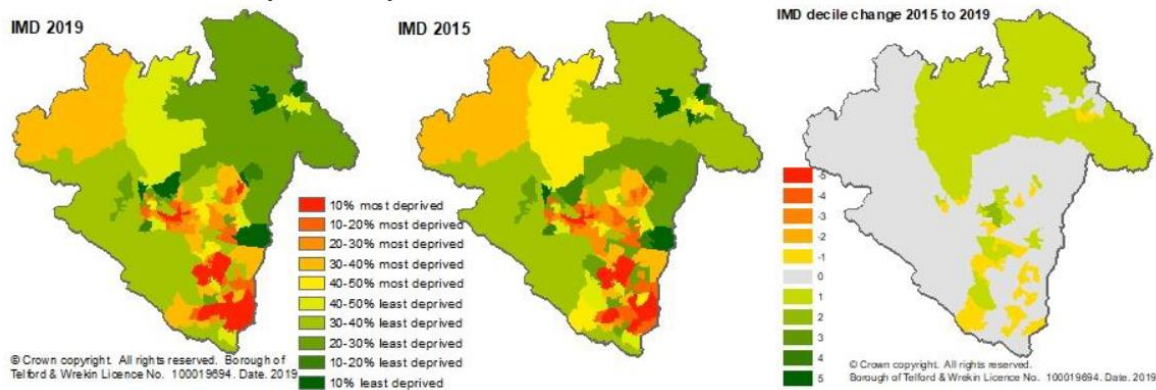


The Health Deprivation and Disability domain has the highest number of Telford and Wrekin LSOAs in the 50% most deprived nationally (84 out of 108, with over a third of local areas (37 out of 108) ranked in the 20% most deprived for this domain.

The Living Environment domain has the least number of Telford and Wrekin LSOAs in the 50% most deprived nationally (15 out of 108) with more than a third (40 out of 108) local areas ranked in the 10% least deprived for this domain

The image below shows the index of multiple deprivation in the form of a heat map highlighting areas of concentration of most deprivation to least when compared nationally.

### Index of Multiple Deprivation



### Most Deprived

- A total of 18 areas in the Borough are ranked in the 10% most deprived nationally in 2019 (Brookside x2, College, Madeley & Sutton Hill x4, Dawley & Aqueduct x2, Donnington, Hadley & Leegomery, Malinslee & Dawley Bank x3, Woodside x4), with a further 10 areas ranked in

the 10-20% most deprived nationally (Arleston, Donnington, Hadley & Leegomery, Haygate, Oakengates & Ketley Bank, St Georges, The Nedge x2, Woodside, Wrockwardine Wood & Trench).

- It is estimated that a quarter of the Borough's population (26%), some 53,800 people are living in areas in the 20% most deprived nationally with 27,300 (16%) in areas in the 10% most deprived.
- The most deprived LSOA in the Borough (Brookside) is ranked 346 nationally (where 1 is most deprived) placing it in the top 2% most deprived of areas nationally, this LSOA was also the most deprived area in the Borough in 2015, but was ranked at 575 nationally, showing an increase in relative deprivation.

## Employment and Commerce

The top four employment sectors in Shropshire are health, retail, manufacturing and education. These all account for around one in ten jobs (even higher in the case of health) and together they represent approaching half of all jobs.

Telford hosts the largest manufacturing sector, as a proportion of the local economy, in the West Midlands, equivalent to over a fifth of locally-produced Gross value added (or GVA) Although in absolute terms manufacturing in Telford is equivalent to 5% of total regional manufacturing output, the relative concentration in the borough has provided the basis for the development of a cluster of high-technology manufacturing enterprises.

Overall, the local economy is comparatively well balanced across the four principal sectors, namely production (27%), logistics (31%), services (22%) and societal (20%), with 20,000 employees in the public sector, the greater proportion of employment of the 77,000 labour force is in the private sector. The logistics sector, namely: wholesale and retail; transportation and storage; accommodation and food service activities; as well as information and communications technology are also one of the strongest in the region, as a proportion of the local economy.

The Council's last review of the rural economy was conducted in 2013. Drawing on this data, Table 1 (below) shows a split of businesses in the rural area that demonstrates the importance of agriculture by the number of businesses.

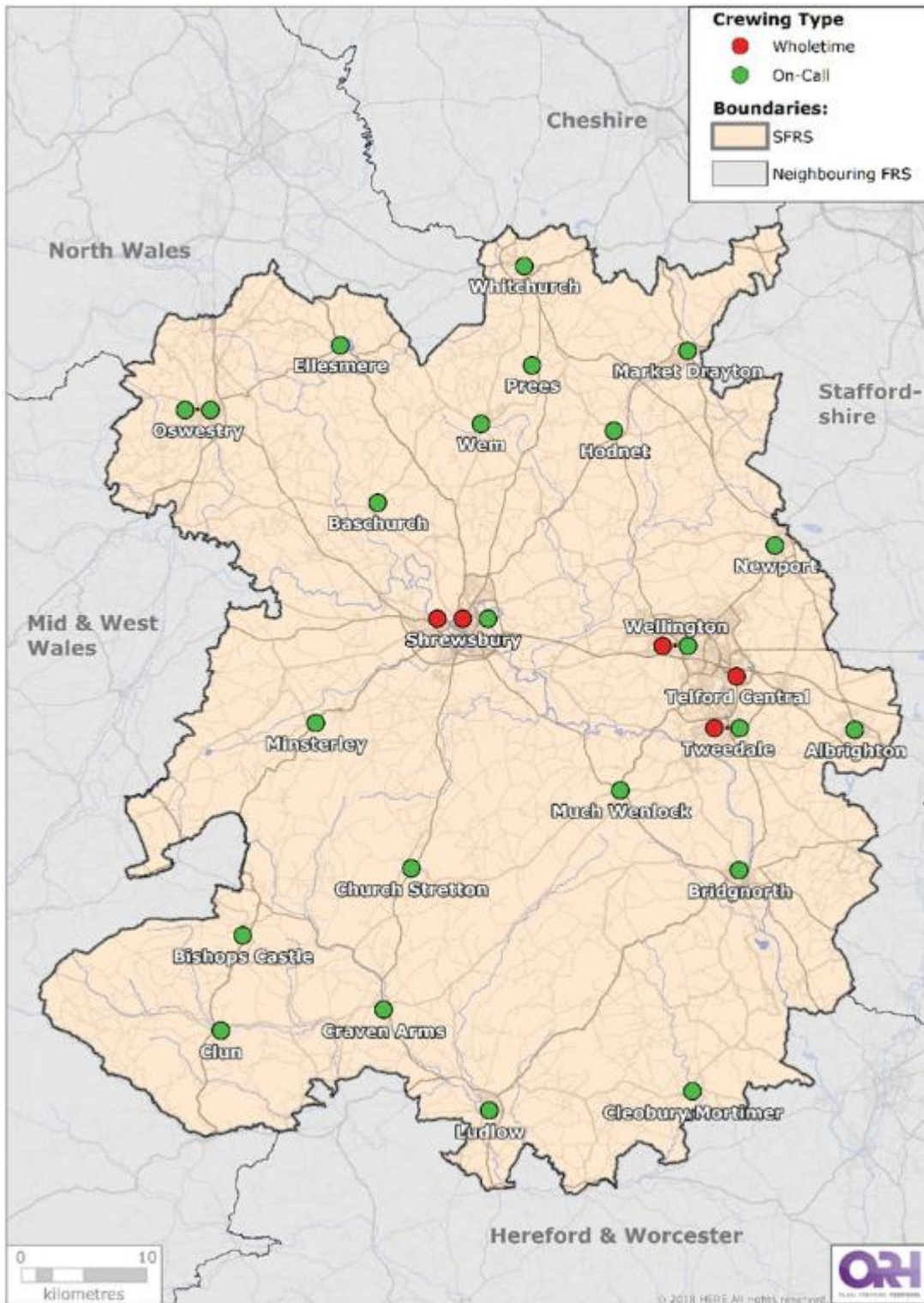
Table: Breakdown of businesses in the rural area by sector

Sector	Number of businesses
Agriculture, forestry & fishing	155
Wholesale & retail trade, repair of motor vehicles	105
Professional, scientific & technical services	85
Construction	85
Tourism and recreation	50
Public Administration, Education and Health	55
Administrative & support service activities	45
Manufacturing	50
Other	130
<b>Total</b>	<b>755</b>



## Shropshire Fire & Rescue Service

SFRS has 23 fire stations placed in strategic positions across the county with 28 pumping appliances in total, supported by a variety of specialist appliances. These vehicles and their crews provide us with the capability to respond to a wide range of emergencies. 3 of our fire stations are crewed by wholetime firefighters, 22 are crewed by on call firefighters and 2 fire stations have a mixture of wholetime and on call firefighters.



# Risk Analysis

## Normal and Foreseeable Risk

The Fire and Rescue National Framework for England requires us to identify and assess the full range of foreseeable fire and rescue related risks Shropshire faces. Within that, we need to plan for both what is normal demand and what is beyond normal demand. This is driven by [The Fire and Rescue Services Act 2004](#), which states that (in relation to fires and road traffic collisions) fire and rescue services must secure the provision of the personnel, services and equipment necessary efficiently to meet all normal requirements. The Act does not define what normal requirements are. The CRMP is the process we undertake to ensure we can understand what is required to ensure we can manage normal demand in Shropshire.

When we describe foreseeable Hazards and Risks in later sections of this document, we identify whether we consider them to be normal or beyond normal. This will then inform the resource review, a critical process that enables evidence-based decision-making, informed resource allocation, and targeted investments to maximise the service's ability to mitigate risks, save lives, and safeguard property within the communities of Shropshire.

## Normal Risk

Our normal conditions of operation are the incidents (and false alarms) we manage in our communities on a day-to-day basis and those risks which, whilst less common, are still normal and to be expected (e.g. larger incidents). We know from our experience, and from our risk analysis, that there will be some days when the demand for a response to incidents is significantly higher than on others. These circumstances include some large incidents that require us to deploy multiple resources to one location or because there are multiple incidents happening at the same time (known as spate conditions). Spate conditions are commonly caused by challenging weather events such as heatwaves, flooding, high winds or snow. Although these risks are normal, they are infrequent, and we set specific expectations around our response in these conditions.

## Beyond Normal Risk

When demand is beyond normal, we will need to request assistance to support our service. These conditions are caused by particularly large incidents, or periods of spate conditions that are very unusual. We have long-standing arrangements in place with neighbouring fire and rescue services to support each other during these periods, ensuring we can provide an ongoing response to incidents. These arrangements are known as reinforcement schemes, or more commonly as mutual aid.

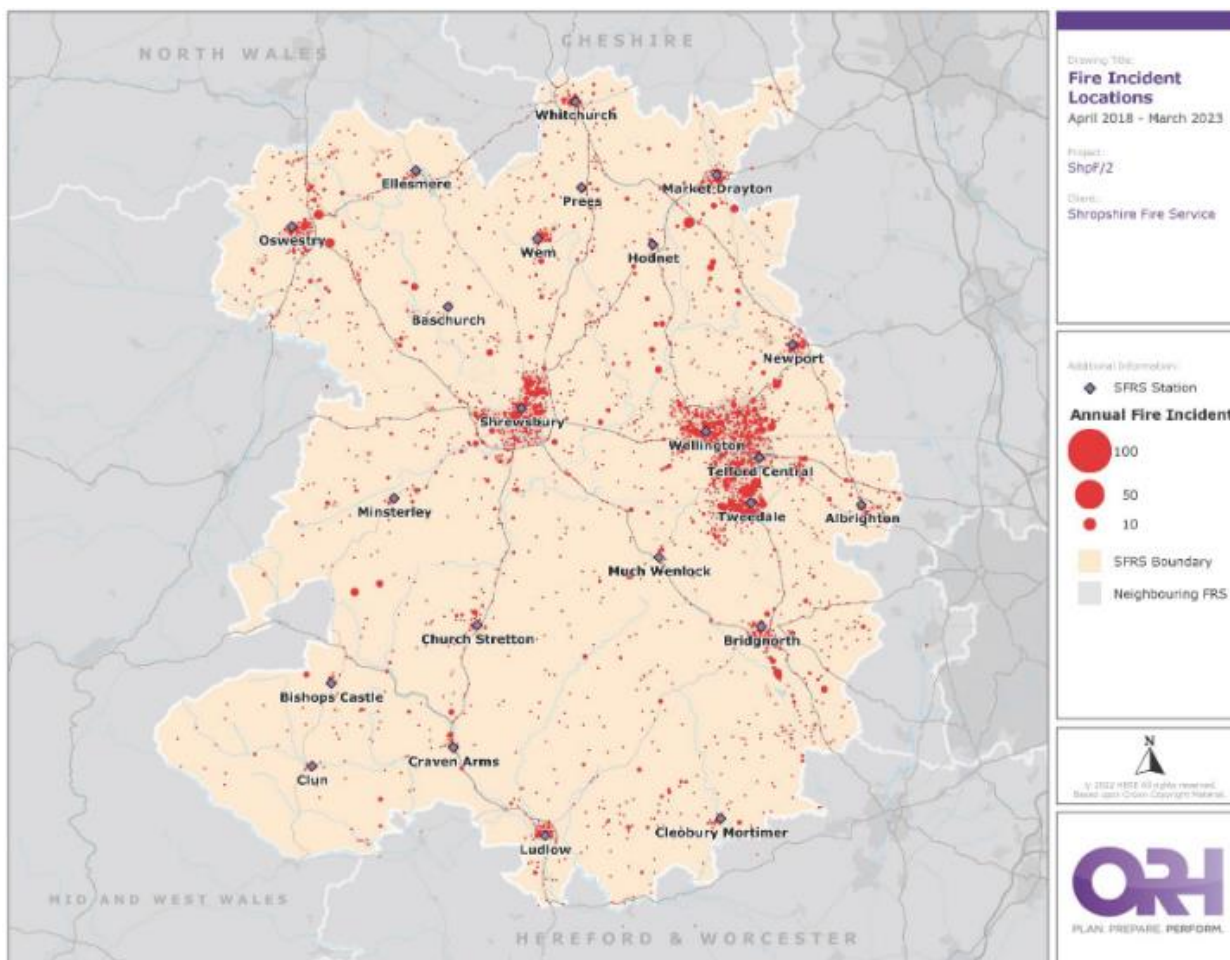
When the scale of an incident or spate conditions is so severe that it outstrips mutual aid arrangements, such as during regional or national storms, or where an incident is very large or requires specialist technical support, we can call upon national assets to support our deployment. These national resilience assets are continuously available and provide specialist capabilities, personnel and resources which enhance our ability to respond effectively to large-scale or critical incidents. Those incidents may be natural disasters, industrial accidents or terrorist attacks.

## Fire Risk in Shropshire

SFRS is required by The Fire and Rescue Services Act to promote fire safety, to make provision for protecting life and property from fires and ensuring we have the resources necessary to meet all normal requirements.

To best plan our activities, we need to understand the risk of fire across the county. Over the past 5 years we have been called to over 5,000 fire incidents in Shropshire. Of these, around half are more serious, primary fires including house fires and vehicle fires, and the other half are secondary fires – for example rubbish fires or fires on open land. The map below shows the location of the fires we have been called over the past 5 years. The incidents are concentrated in our towns and other residential areas.

**Map: Primary, Secondary and Chimney Fire Incidents**



Fires start in many different circumstances and have different impacts. For many fire types, knowing where we have attended fires previously is a good starting point, however as many fire types are thankfully rare, we also need to consider that there may be other high risk areas to identify. Different types of fires have different causes and different factors associated with them. We have considered these associated factors in our risk analysis. We have followed the NFCC definition of risk in considering factors related to people, place and property.

As these factors are different for different fire types, and because there are some fire types that present specific risks and warrant particular attention when we are planning our mitigation activity, we have considered the main types of fire risk separately, covered in the following sections.

## Fires in Dwellings

Dwelling fires are a particular cause for concern in our communities. This hazardous event involves fires in a house, flat or other place of residence.

### Risk Category

**Likely to be normal, but foreseeable risk.** Dwelling fires have a Medium likelihood score, Medium Individual consequence score, this results in a Medium rating under risk analysis.

The image below shows the NFCC Dwelling Fire Risk Category. The Hazardous Event, Dwelling fires, are recorded as an operational Risk Category.

Image: NFCC Dwelling Fire Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Structures	Domestic Residential Building	Dwelling Fire

The risk of dwelling fires is recorded in the Community Risk Register. The West Mercia Local Resilience Forum recognises the community risk from dwelling fires within Shropshire and provides fire prevention and safety advice for local communities.

<https://www.westmercia.police.uk/SysSiteAssets/media/images/west-mercia/about-us/west-mercia-local-resilience-forum/community-risk-register-v4.pdf>

### Hazard Type

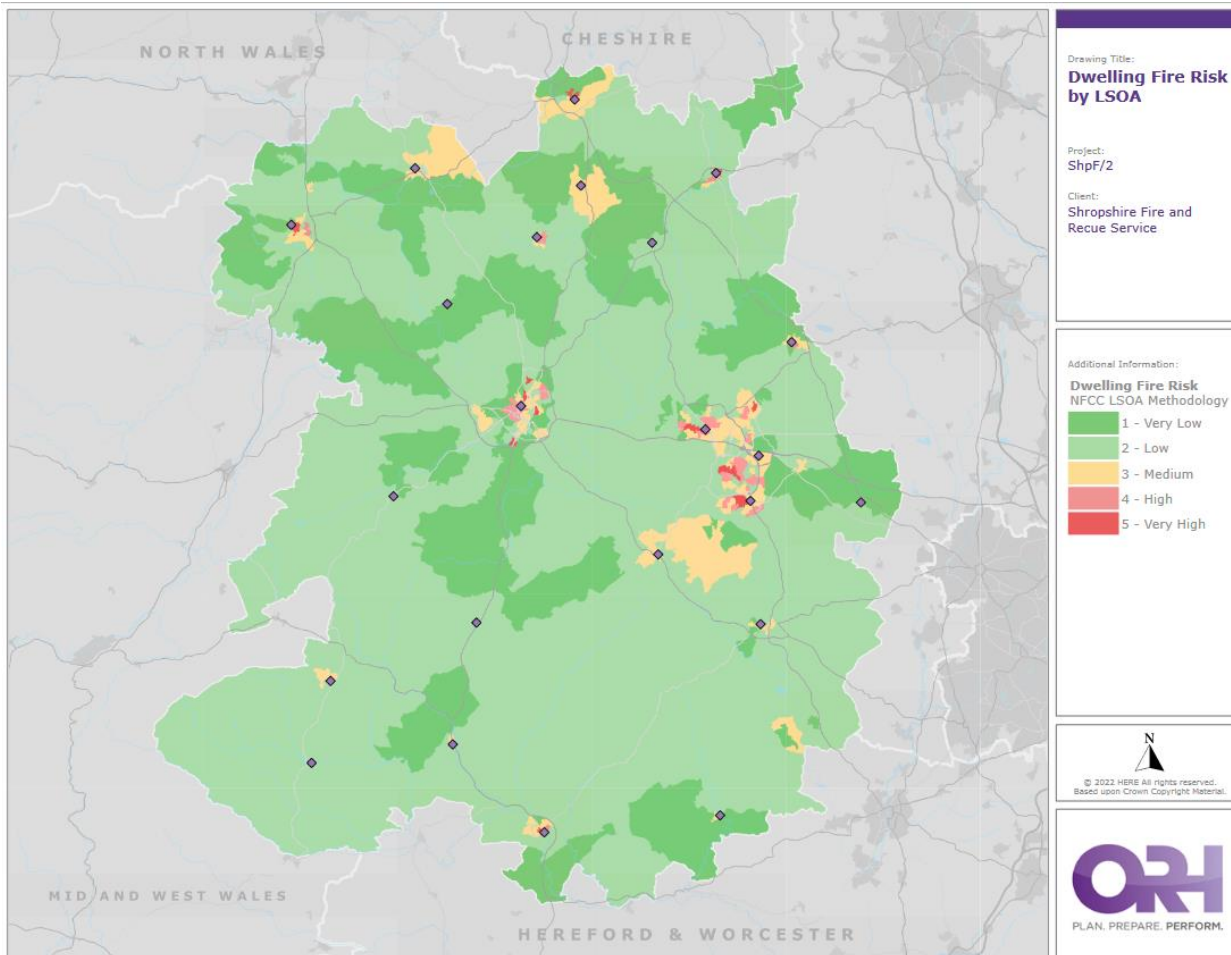
Fires in the home are one of the biggest concerns for our communities. Nationally, around 200 people die in dwelling fires each year. 'Dwellings' includes all homes, but doesn't include some other residential properties types such as care homes or hostels. Over the past 3 years in Shropshire there have been 5 fatalities and 19 serious injuries in accidental dwelling fires. Even when there are no casualties, the impact of a fire on the lives of those involved can be catastrophic.

This hazard type represents a **normal risk** that Shropshire Fire and Rescue Service (SFRS) manages on an ongoing basis. Large incidents may be beyond normal.

To further support the risk analysis of fire in dwellings the NFCC have recently developed the National Risk Methodology for UK FRS: Domestic Dwelling Fires. The Dwelling Fire Risk Model, uses national incident data and demographic datasets to establish the factors that predict dwelling fire risk. This is useful because at a county level these incidents are quite unusual and whilst the historic pattern is helpful, it may not identify all high risk areas.

The below Domestic Fire Risk Model looks at risk by Low Super Output Areas (LSOA). The model enables us to rank our LSOA areas by risk and identify those that are high risk. These are high risks relative to the rest of the county, not a comparison with other areas of the UK.

Image: Dwelling Fire Risk Model



## Statutory duty

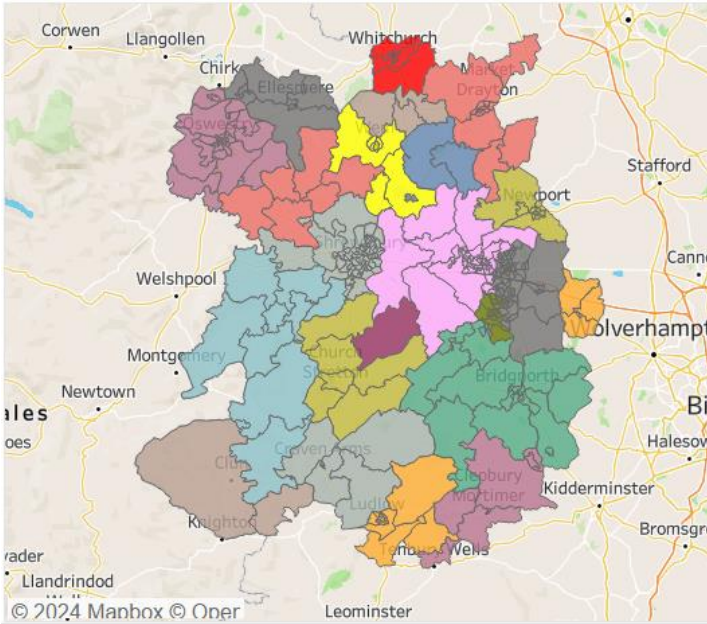
SFRS is required by The Fire and Rescue Services Act to make provision for extinguishing fires in their area, protecting life and property in the event of fires and ensuring we have the resources necessary to meet all normal requirements.

## Likelihood

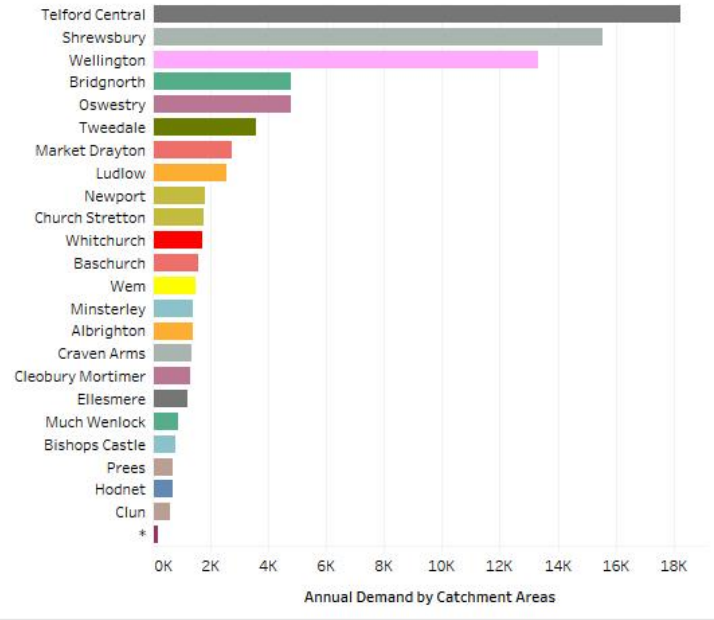
In Shropshire, the dwelling fire rate is notably lower than for England (4.455, compared to 5.092 incident rate), suggesting that incidents involving dwelling fires are less frequent than the national average.

The image below shows that our highest risk areas for domestic fires are, as we might expect, in our urban centres, particularly Telford, Shrewsbury, Oswestry and Bridgnorth.

Catchment Areas with 23 stations selected



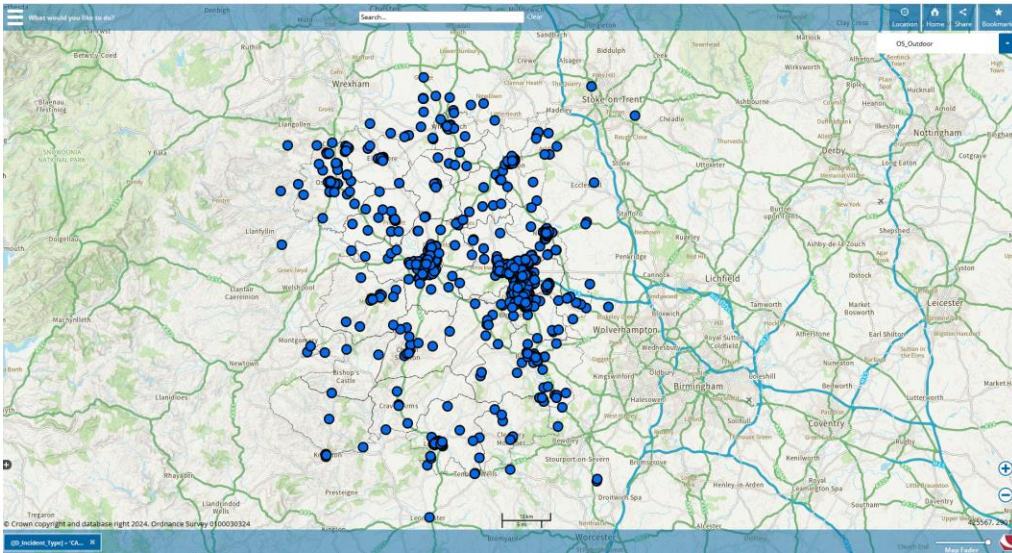
Catchment Area Demand with 23 stations selected



We have compared these predicted dwelling fire risk areas to our historic incidents. The image below shows where our domestic fire incidents have been concentrated in the last 7 years. This shows a good association between the predicted high likelihood areas and our historic incidents.

Image: Domestic Fires in Shropshire





## Consequence

Over the past seven years, Shropshire's annualized dwelling fires fatality/injury rate is 8.32 per 100,000 people, significantly lower than the national average of 9.39 per 100,000. This likelihood of dwelling fire fatalities/injuries occurring is rated as "Medium" (M).

## Risk Groups

Fires in the home are one of the biggest concerns for our communities. Dwelling fires also represent an emergency responder risk of injury and death.

Risk Group	Explanation
Individual	An individual or small group of individuals within a single dwelling or location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create sever consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

National Home Office Data for fire fatalities and injuries state that there are factors that put individuals at a higher risk of dying in a fire.

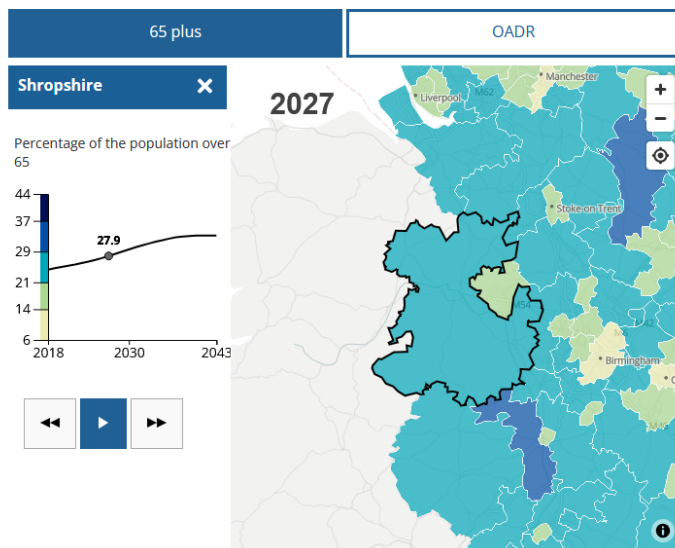
An interrogation of the Service's historical incident dataset and an analysis of national data, including Home Office data, identified that in the case of a fire, individuals who are at **highest risk of dying in a fire** are those aged over 65, who live alone, with reduced mobility, a disability, or an impairment due to drugs and/or alcohol and smokers.

Individuals over the age of 65 represent the largest proportion of fire fatalities in SFRS area over the last 10-year period. Whilst the data extracted using the NFCC Method doesn't put this age group as the one most likely to have a fire, if this groups of individuals do have a fire, the consequences are likely to be much more severe.

An interrogation of the Service's database, which provides details on operational incidents attended by fire crews, and an analysis of national data, including Home Office data, identified that individuals who are at **highest risk of having a fire** are those under the age of 60, who live alone, with a long-term illness or disability particularly when having had a previous fire, or individuals who live in deprived areas and households where there are children under the age of five.

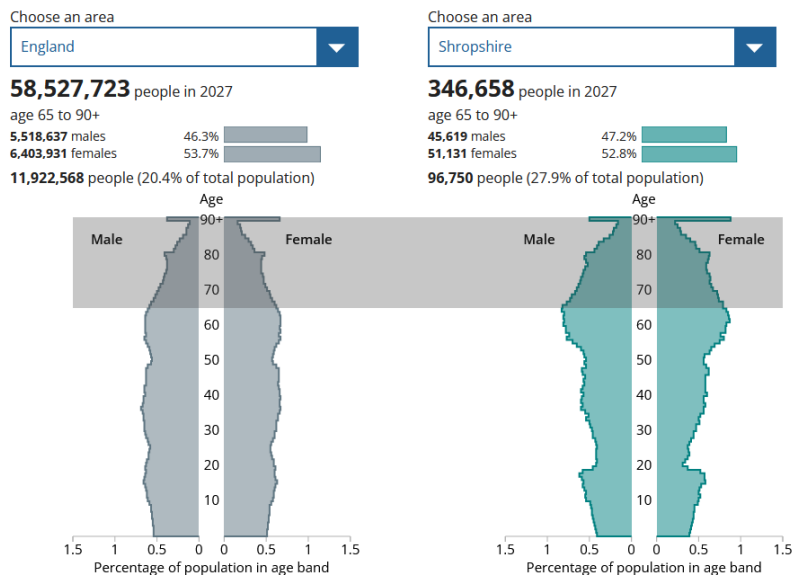
Shropshire has an ageing population and by 2027, the proportion of people aged 65 and over is projected to increase to 96,750, representing more than one in four of the total population (27.9 per cent).

Figure 1: A heat map of proportion of people aged 65 years and over and old age dependency ratio by local authority over the 25-year projection



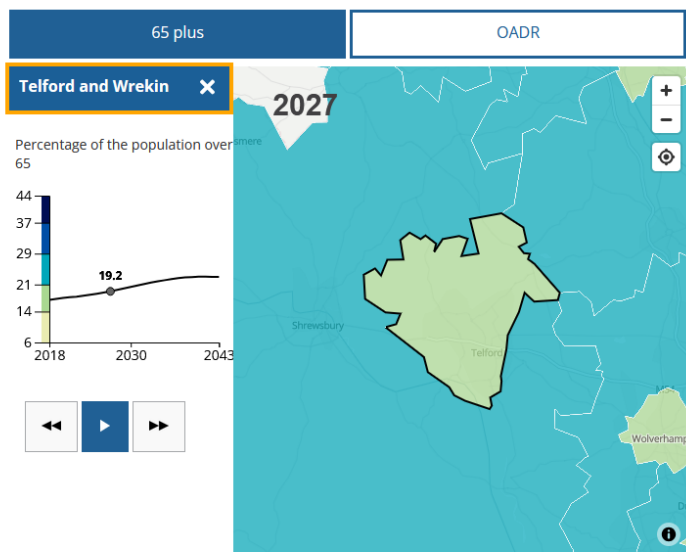
Source: Office for National Statistics

**Figure 2: Population age structure by single year of age and sex for local authorities, counties, regions and England as a whole, mid-2018 to mid-2043**



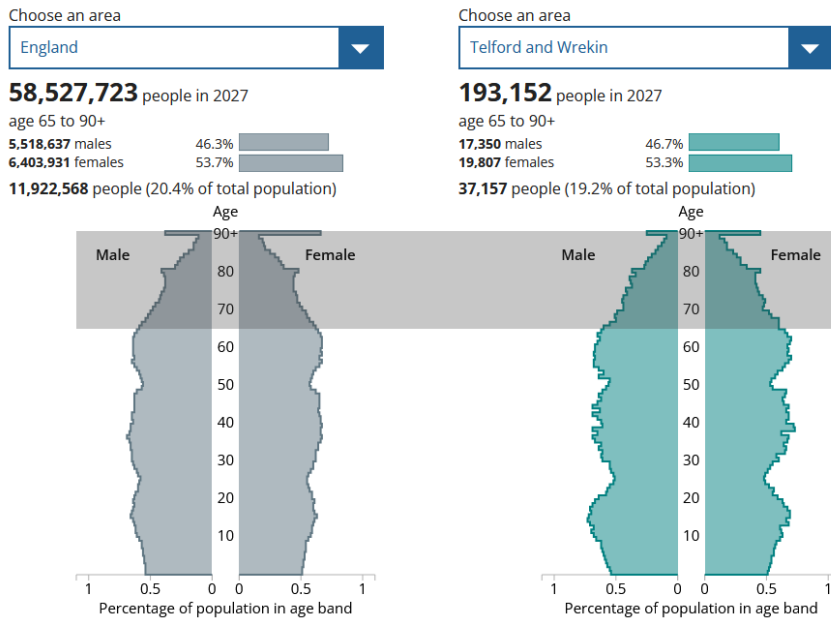
Telford also has an ageing population and by 2027, the proportion of people aged 65 and over is projected to increase to 37,157, representing more than one in four of the total population (19.2 per cent).

**Figure 1: A heat map of proportion of people aged 65 years and over and old age dependency ratio by local authority over the 25-year projection**



Source: Office for National Statistics

Figure 2: Population age structure by single year of age and sex for local authorities, counties, regions and England as a whole, mid-2018 to mid-2043



## Management of Risk

The dwelling fire hazard event has an Individual and responder risk rating of **Medium**.

Current control measures include the mobilisation of 2 appliances to dwelling fires. An additional appliance is mobilised to persons reported fires. SFRS has also set the requirement for all wholetime firefighters to maintain the First Response Emergency Care (FREC) qualification as part of their role. Finally, a prevention strategy is coordinated by the Prevention Manager, this results in safety campaigns and community engagement through Home Fire Safety Visits, social media and events.

SFRS has developed a robust framework for its Prevention Strategy, aligning closely with the National Fire Chiefs Council (NFCC) methodologies and emphasising the importance of staff competence, and stakeholder engagement. Despite significant progress, there are opportunities for enhancement by incorporating advanced technologies, improved quality assurance, expanding partnerships, and fully integrating the NFCC's risk assessment tools.

The Dwelling Fire Review will further consider several areas for enhancement. Integrating the NFCC's Domestic Dwelling Fire Methodology, utilising commercial data sources, and developing AI-driven tools can significantly refine risk assessments and prevention strategies. Additionally, expanding outreach programs to be more inclusive and culturally sensitive, increasing volunteer program capacity, and addressing socio-economic factors through partnerships with local authorities are critical steps towards a more comprehensive and effective prevention strategy.

## Fire in other premises

SFRS frequently respond to fires that in 'other' buildings or premises, some of which also include significant risk to our communities. For example, factory buildings, agricultural building and other property types where people sleep, including hospitals, hotels and residential care homes.

### Risk Category

**Likely to be high, but foreseeable risk.** Fires in other premises has a Medium likelihood score, Very High Individual consequence score, this results in a High rating under risk analysis.

The risk of Other Building Fires is recorded in the Community Risk Register. The West Mercia Local Resilience Forum recognises the community risk from dwelling fires within Shropshire and provides fire prevention and safety advice for local communities.

<https://www.westmercia.police.uk/SysSiteAssets/media/images/west-mercia/about-us/west-mercia-local-resilience-forum/community-risk-register-v4.pdf>

### Hazard Type

This hazard type represents a **normal risk**, that Shropshire Fire and Rescue Service (SFRS) manage on an ongoing basis. Large incidents may be beyond normal.

The table below shows the NFCC Other Building Fire Risk Category. The Hazardous Event, Other Building Fires, are recorded as an operational Risk Category.

Table: NFCC Dwelling Fire Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Structures	Other Buildings	Other Building Fire

### Statutory duty

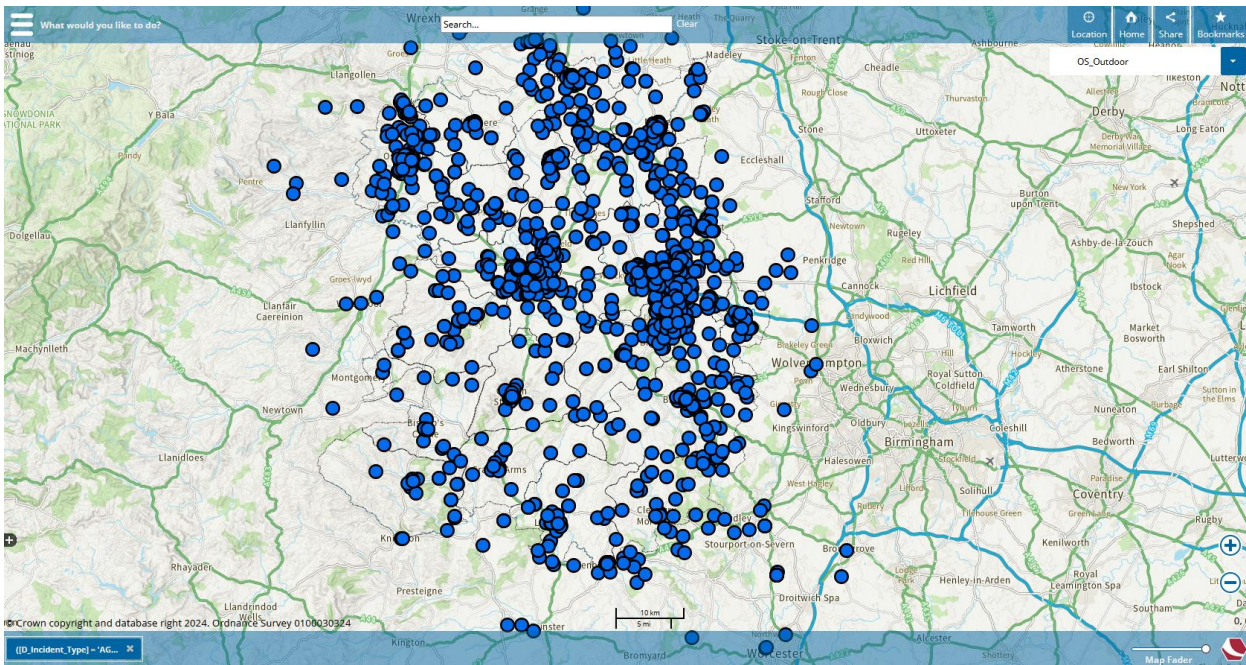
SFRS is required by The Fire and Rescue Services Act to make provision for extinguishing fires in Shropshire, protecting life and property in the event of fires and ensuring we have the resources necessary to meet all normal requirements.

## Likelihood

In Shropshire, the other building fire rate is marginally higher than for England (2.920, compared to 2.524 incident rate), suggesting that incidents involving other building fires are more frequent than the national average.

The below image shows the fires we have been called to in non-domestic premises types over the past 7 years. Similarly to domestic fires, these are concentrated in the Telford, Shrewsbury, Wellington, Bridgnorth and Oswestry urban areas.

## Image: Fires in non domestic buildings



## Consequence

Over the past seven years, Shropshire's annualized other building fires fatality/injury rate is 2.2 per 100,000 people, significantly higher than the national average of 1.6 per 100,000. This likelihood of other building fire fatalities/injuries occurring is rated as "High" (H).

There are a large number of different non dwelling property types and each have particular risks and risk factors associated with their use. The NFCC is currently developing a non-dwelling premises risk model, to be used alongside the dwelling fire model we have discussed above. However, the analysis for the model is not yet complete.

Our Risk Based Inspection Programme (RBIP) identifies property types which we can inspect under the Regulatory Reform Order which we consider to be higher risk. The RBIP methodology identifies a

number of factors associated with increased fire risk and where available, assesses and scores these factors for each individual property, leading to a prioritised programme of inspection. The risk factors in RBIP include those relating to the property itself, such as size and number of floors, factors that indicate previous compliance such as previous enforcement activities and local area factors including the level of deprivation.

## Risk Groups

Risk Group	Explanation
Individual	An individual or small group of individuals within a single premises or location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

## Management of Risk

The other building fire hazard event has an Individual risk rating of **High** and responder risk rating of **Medium**.

Current control measures include the mobilisation of 2 appliances to other building fires. An additional appliance is mobilised to persons reported fires. SFRS has also set the requirement for all wholetime firefighters to maintain the First Response Emergency Care (FREC) qualification as part of their role. Finally, a protection strategy is coordinated by the Protection Manager, this results in a Risk Based Inspection Program, enforcement, partnership working and safety campaigns.

SFRS has developed a robust framework for its Protection Strategy, aligning closely with the National Fire Chiefs Council (NFCC) methodologies and emphasising the importance of staff competence, and stakeholder engagement. Despite significant progress, there are opportunities for enhancement by conducting a review of the impact of recent legislation changes and the impact this will have on the RBIP, incorporating advanced technologies, improved quality assurance, expanding partnerships, and fully integrating the NFCC's risk assessment tools.

In addition to our Risk Based Inspection Programme, we separately identify sites that, if involved in fire (or another incident), present a significant risk to the occupants, the community or to our firefighters. We carry out Risk Management System (RMS) risk assessment and familiarisation visits to these sites.

The Service's existing control measure for this identified risk includes the provision of two Aerial Ladder Platforms (ALPs) situated at Telford Central and Shrewsbury. As these ALPs are nearing the end of their operational timeline for effectiveness and efficiency the CRMP 2025-29 will include the Aerial Ladder Platform capability review.

The Aerial Ladder Platform capability review assesses the current equipment, training programs, and protocols related to working at height operations and medium/ high rise firefighting operations. It identifies any gaps or deficiencies and proposes recommendations for enhancing safety and operational efficiency in this area.

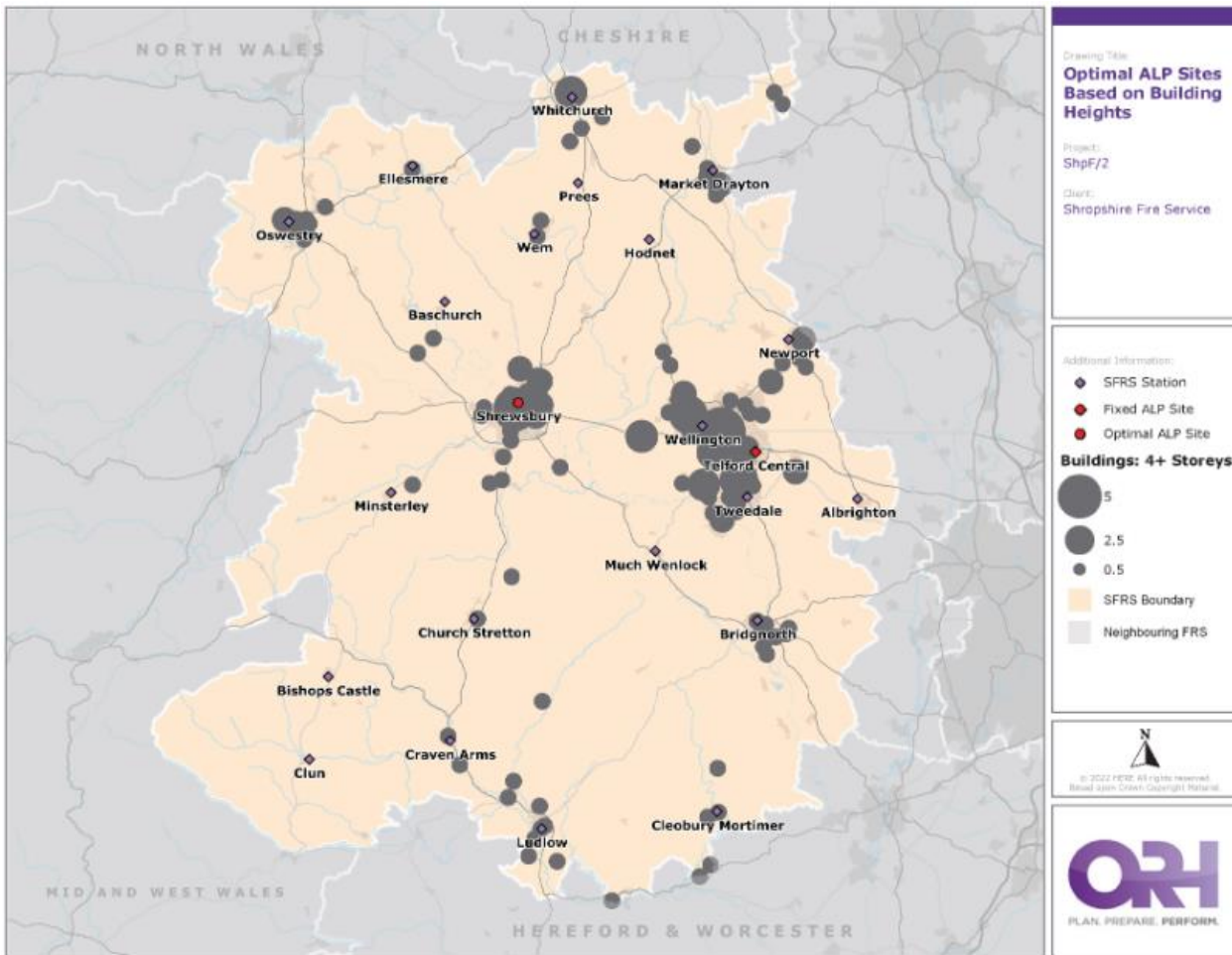
## Medium and High Rise Fires

Medium and high rise buildings present a particular set of challenges due to the complex nature of firefighting within these premises, the numbers of people often present, and the sometimes difficult evacuation routes.

SFRS defines tall buildings as any building that has an occupied floor more than 18m above the Fire Service access level, which generally means a building of 6 floors or more. Tall building types include residential flats, hotels, institutions, hospitals, commercial offices and mixed occupancies.

The image below shows the location of the 200+ properties in Shropshire consisting of four floors, the vast majority are medium rise, over 4 floors, under 18 metres. Included in this number are the 4 high rise building The Haybridge, Apley Court, Reynolds House and Richards House.





Our integrated approach to risk of fires in tall buildings is to ensure the vulnerabilities associated with high rise living are accommodated in our risk based prevention programme and that our regulatory activity proactively targets high risk premises within our RBIP. Our response modelling helps us to understand if we have the correct resources in optimum locations to attend incidents. As shown in the image above the optimal ALP sites based on building heights is within the urban areas of Telford and Shrewsbury.

### Risk Category

**Likely to be low, but foreseeable risk.** High Rise Fires has a low likelihood score, Medium Individual consequence score, this results in a Low rating under risk analysis.

The image below shows the NFCC Other High Fire Risk Category. The Hazardous Event, High Rise Building Fires, are recorded as an operational Risk Category.

### Image: NFCC High Rise Fire Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Structures	Other Buildings	Other Building Fire
	Domestic Residential Building	Dwelling Fire

### Hazard Type

This hazard type represents a **low risk** that SFRS manage on an ongoing basis. We consider tall building fires to be foreseeable low risk. However, it is conceivable that an established fire in a tall building would be declared a major incident. This progression would lift the incident beyond our normal operational planning assumptions.

In response to the Grenfell Tower fire recommendations the service has audited the four residential high rise premises which were found to be broadly compliant with the regulations and found no evidence of flammable cladding. The inspection of high rise premises is incorporated in the Service's RBIP and audited every three years.

### Statutory duty

SFRS is required by The Fire and Rescue Services Act to make provision for extinguishing fires in their area, protecting life and property in the event of fires and ensuring we have the resources necessary to meet all normal requirements.

### Likelihood

In Shropshire, the high rise fire rate is notably lower than for England (0.031, compared to 0.472 incident rate\*), suggesting that incidents involving high rise fires are less frequent than the national average.

### Risk Groups (Impact)

High Rise fires remain a concern for our communities following the Grenfell tower fire and media coverage. High Rise fires also represent an emergency responder risk of injury and death.

Risk Group	Explanation
Individual	An individual or small group of individuals within a single dwelling or location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

## Management of Risk

Following the Grenfell tragedy on 14 June 2017, SFRS have implemented phase 1 of the four-phase Built Environment Programme to ensure we are able to effectively manage the risk presented by tall buildings. The subsequent phases will be adopted in full when published.

SFRS will send a pre-determined attendance of 4 pumping appliances, 1 aerial appliance, 1 Incident Command Unit, 3 level 2 officers and 1 level 3 officer. Any significant high rise fire will require the commitment of considerable additional operational resources.

SFRS has developed a robust framework for its Protection Strategy, aligning closely with the National Fire Chiefs Council (NFCC) methodologies and emphasising the importance of staff competence, and stakeholder engagement. Despite significant progress, there are opportunities for enhancement by conducting a review of the impact of recent legislation changes and the impact this will have on

the RBIP, incorporating advanced technologies, improved quality assurance, expanding partnerships, and fully integrating the NFCC's risk assessment tools.

In addition to our Risk Based Inspection Programme, we separately identify sites that, if involved in fire (or another incident), present a significant risk to the occupants, the community or to our firefighters. We carry out Risk Management System (RMS) risk assessment and familiarisation visits to these sites.

The Service's existing control measure for this identified risk includes the provision of two Aerial Ladder Platforms (ALPs) situated at Telford Central and Shrewsbury. As these ALPs are nearing the end of their operational timeline for effectiveness and efficiency the CRMP 2025-29 will include the Aerial Ladder Platform capability review.

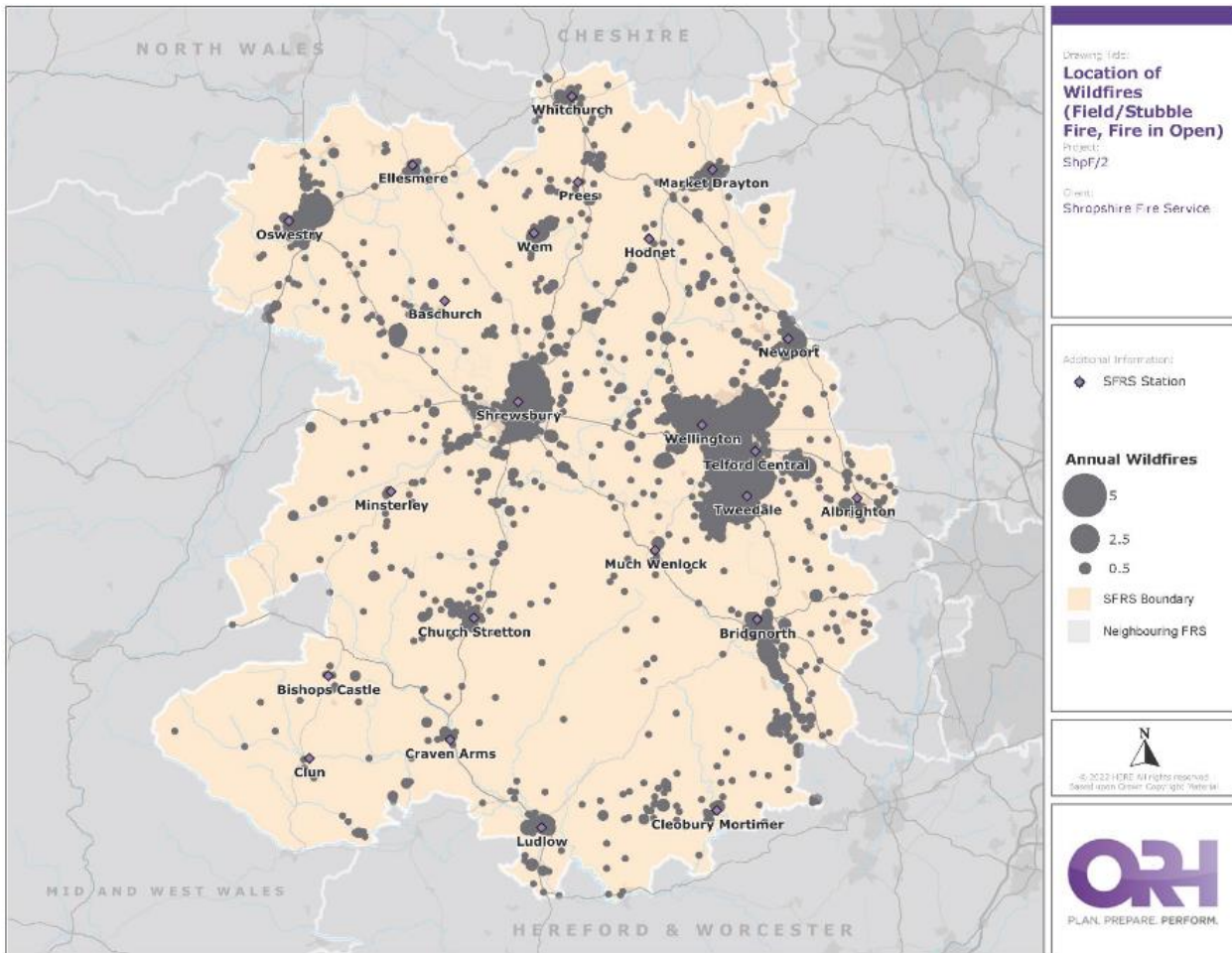
The Aerial Ladder Platform capability review assesses the current equipment, training programs, and protocols related to working at height operations and medium/ high rise firefighting operations. It identifies any gaps or deficiencies and proposes recommendations for enhancing safety and operational efficiency in this area.

## Outdoor Fires

Incidents involving fires in the open range from large wildfires as we saw in the summer of 2022, to field fires involving farm land and small fires in the open such as trees, refuse and vehicles. In Shropshire they primarily cause harm to the environment and property. During hot weather multiple fires in the open happening at the same time reduces our capacity to respond to other emergencies.

Our risk analysis has addressed large incidents of wildfire and periods of large volumes of outdoor fires during hot, dry weather.

The image below shows the location of all outdoor fires 2022/23



## Secondary Fires

Most outdoor fires are secondary fires. Secondary fires are generally small outdoor fires, not involving people or property. These include refuse fires, grassland fires and fires in derelict buildings or vehicles.

## Risk Category

**Likely to be low, but foreseeable risk.** Secondary fires has a low likelihood score, Medium Individual consequence score, this results in a Low rating under risk analysis.

## Hazard Type

This hazard type represents a foreseeable **low risk** that SFRS manage on an ongoing basis.

The image below shows the NFCC Secondary Fire Risk Category. The Hazardous Event, Secondary Fires, are recorded as an operational Risk Category.

Image: NFCC Secondary Fire Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Environmental	Fire In Open Spaces	Secondary Fire

### Statutory duty

SFRS is required by The Fire and Rescue Services Act to make provision for extinguishing fires in their area, protecting life and property in the event of fires and ensuring we have the resources necessary to meet all normal requirements.

### Likelihood

In Shropshire, the secondary fire rate is notably lower than for England (10.301, compared to 16.337 incident rate\*), suggesting that incidents involving secondary fires are less frequent than the national average.

### Consequence

Over the past seven years, Shropshire's annualized secondary fires injury rate is 0.5697 per 100,000 people, significantly lower than the national average of 0.618 per 100,000. This likelihood of secondary injuries occurring is rated as "Medium" (M).

### Risk Groups

Secondary fires have an environmental and community impact at public open spaces and the road infrastructure. There is also an associated risk to responding crews of risk of injury.

Risk Group	Explanation
Emergency Responders	Emergency responder risk of death or injury

Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

## Large incidents- Wildfires

Currently, there is no single definition of what constitutes a wildfire and categorisation varies across different agencies.

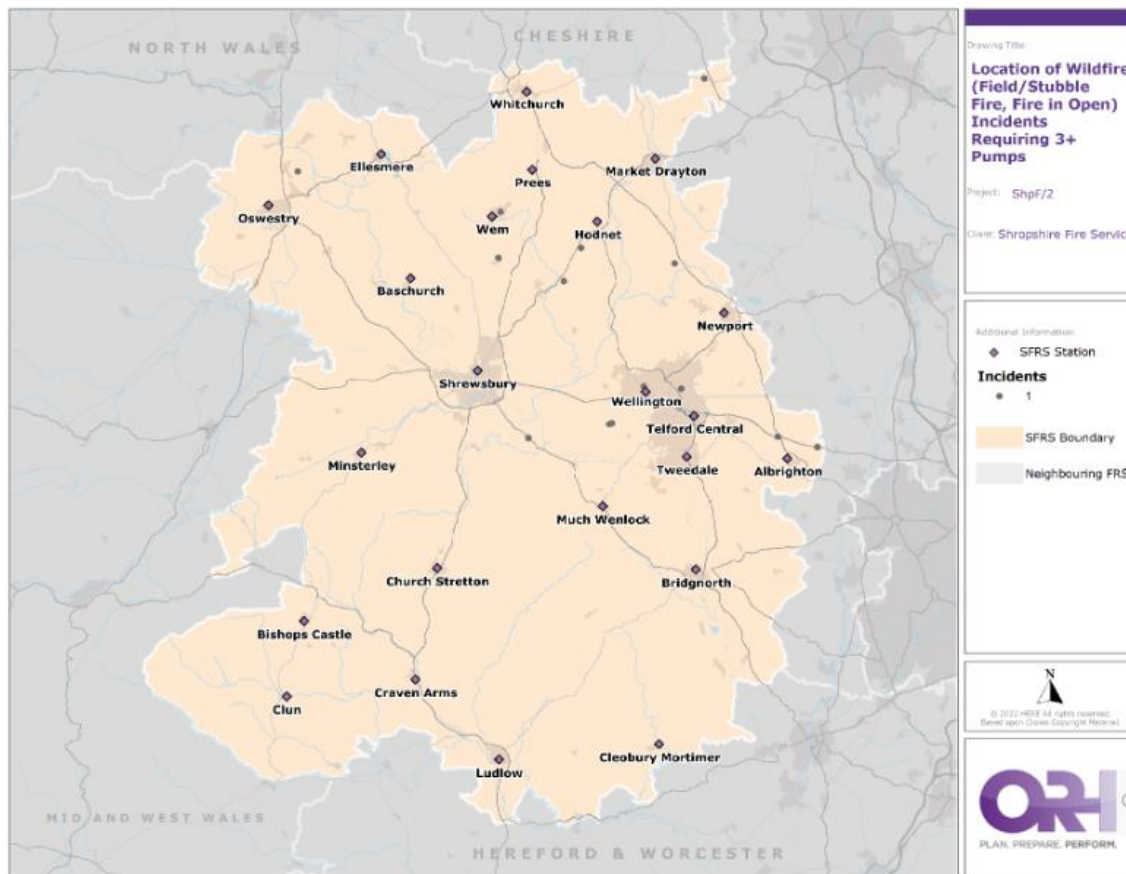
NFCC's Operational Guidance definition of a wildfire meets one or more of the following:

- Involves a geographical area of at least one hectare (10,000 square metres)
- Has a sustained flame length of more than 1.5 metres
- Requires a committed resource of at least four fire and rescue service appliances/resources
- Requires resources to be committed for at least six hours
- Presents a serious threat to life, environment, property, and infrastructure.

Wildfires have the potential to destroy property and equipment and cause injuries, as well as being a very real threat to wildlife and the safety of firefighters and communities.

The image below shows the location of wildfire incidents in Shropshire requiring 3 or more pumping appliances.

# Field/Stubble Fire & Fire in Open – 3+ Pump Incidents

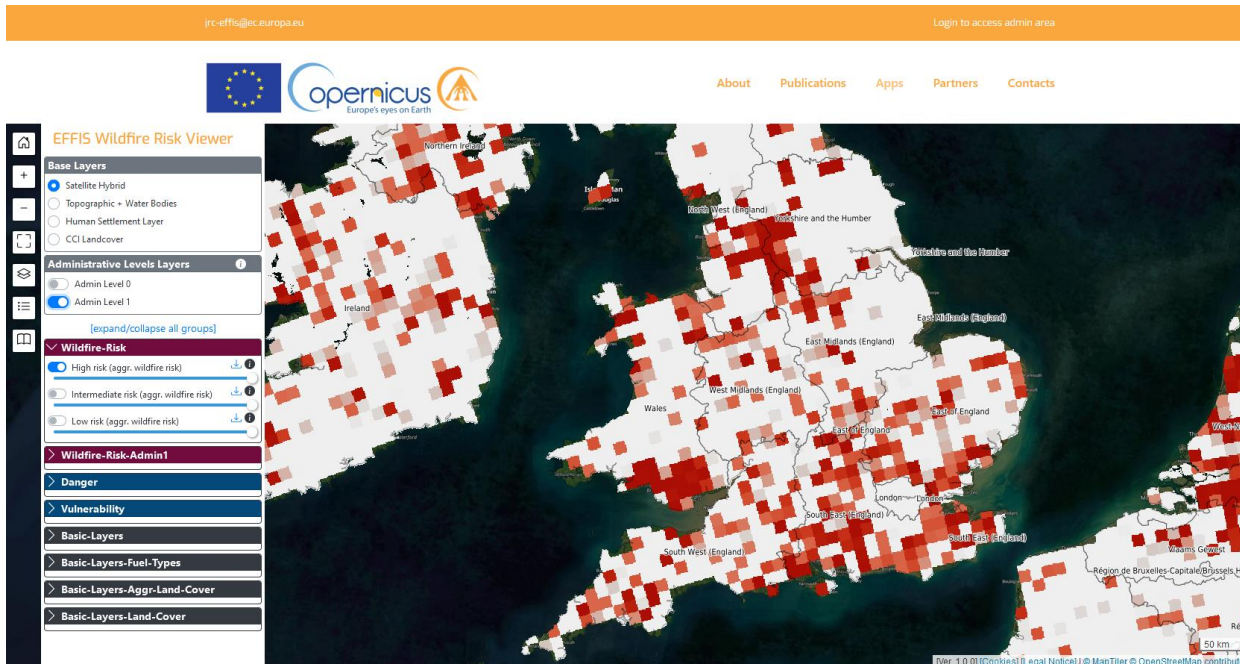


## Risk Category

The National Risk Register identifies the emerging risk of Wildfires. Climate change is likely to lead to changes in the weather patterns that affect the UK, with longer drier summers anticipated. This could lead to drier vegetation and more frequent, larger wildfires.

Wildfires typically occur between February and October. There are differences in nature, scale and timing of the risk across the UK. As seen in the image below, the European Forest Fire Information System (EFFIS) Wildfire Risk Viewer identifies the Church Stretton and Wrekin areas as High Risk when modelling wildfires and considering any other typology of vegetation fires.





SFRS is required to plan for the foreseeable risks in their area, such as wildfires. The Community Risk Management Plan includes a Wildfire Capability Review. This will determine how best to respond to the identified risks and includes local decisions on the provision of appropriate resources to meet these risks and help deliver for their local communities.

The Home Office is working with partners across government and the National Fire Chiefs Council (NFCC) to understand the changing risk and to improve prevention of and response to wildfires. The Home Office also takes an active role in communicating wildfire prevention messages through its Fire Kills campaign. These provide outdoor fire safety messages to Communications and community safety teams within SFRS to support local delivery of fire prevention.

It is easily conceivable that a large area wildfire involving a risk to life, property and infrastructure would be declared a major incident. This progression would lift the incident beyond our normal operational planning assumptions.

The National Risk Register identifies that a reasonable worst-case scenario is based on a sustained and widespread extreme wildfire requiring protracted multi-agency attendance over 4 to 7 days, with a significant impact on responder resilience and business as usual activities. Evacuations would be necessary, with a high risk of casualties and/or adverse health impacts. The wildfire would cause significant disruption or damage to critical infrastructure, transport networks, utilities and the environment.

Fire and Rescue services would lead on the response; putting out of the fire and emergency evacuation and rescue of residents. This would include utilisation of national capabilities, for example high-volume pumps and urban search and rescue. Mutual aid from unaffected Fire and Rescue Services would be requested.

## Hazard Event

The image below shows the NFCC Wildfire Risk Category. The Hazardous Event, Wildfires, are recorded as an operational Risk Category.

Image: NFCC Wildfire Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Environmental	Fire vulnerable areas	Wildfire
Emerging/ foreseeable	Climate Change	Wildfire

## Risk Groups

The risk of wildfire mainly impacts the environment through air pollution, loss of habitat and fire water run off. However, there are associated risks to the community and individuals that may also be harmed.

Risk Group	Explanation
Individual	An individual or small group of individuals within a single premises or location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public

	risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

## Management of Risk

To manage the risk from wildfire incidents SFRS has a provision of Wildfire Tactical Advisors, Pinzgauer and Incident Support Unit off road vehicles, as well as water bowsers and pumping units. SFRS also conducts farm and wildfire Prevention activities supporting campaigns, events and public messaging.

To support the development of CRMP the Service has committed to a **Wildfire Capability Review** – This review provides a comprehensive approach that considers several key elements. Firstly, we will analyse historical incident data to gain insights into previous wildfire incidents, including, spread patterns, and response outcomes. This analysis will inform our decision-making process and help identify areas for improvement. Additionally, it will review the wildfire plans provided by Natural England to ensure alignment with their guidelines and recommendations for effective wildfire management. It will also consider national operational guidance specific to wildfire response, incorporating best practices and standardised approaches to ensure consistency across our operations. Furthermore, we will assess the current training programs to ensure that service personnel receive the necessary knowledge and skills required for effective wildfire response. This will include evaluating the availability and condition of our equipment and personal protective equipment (PPE) to ensure that we are properly equipped to handle the unique challenges of wildfires.

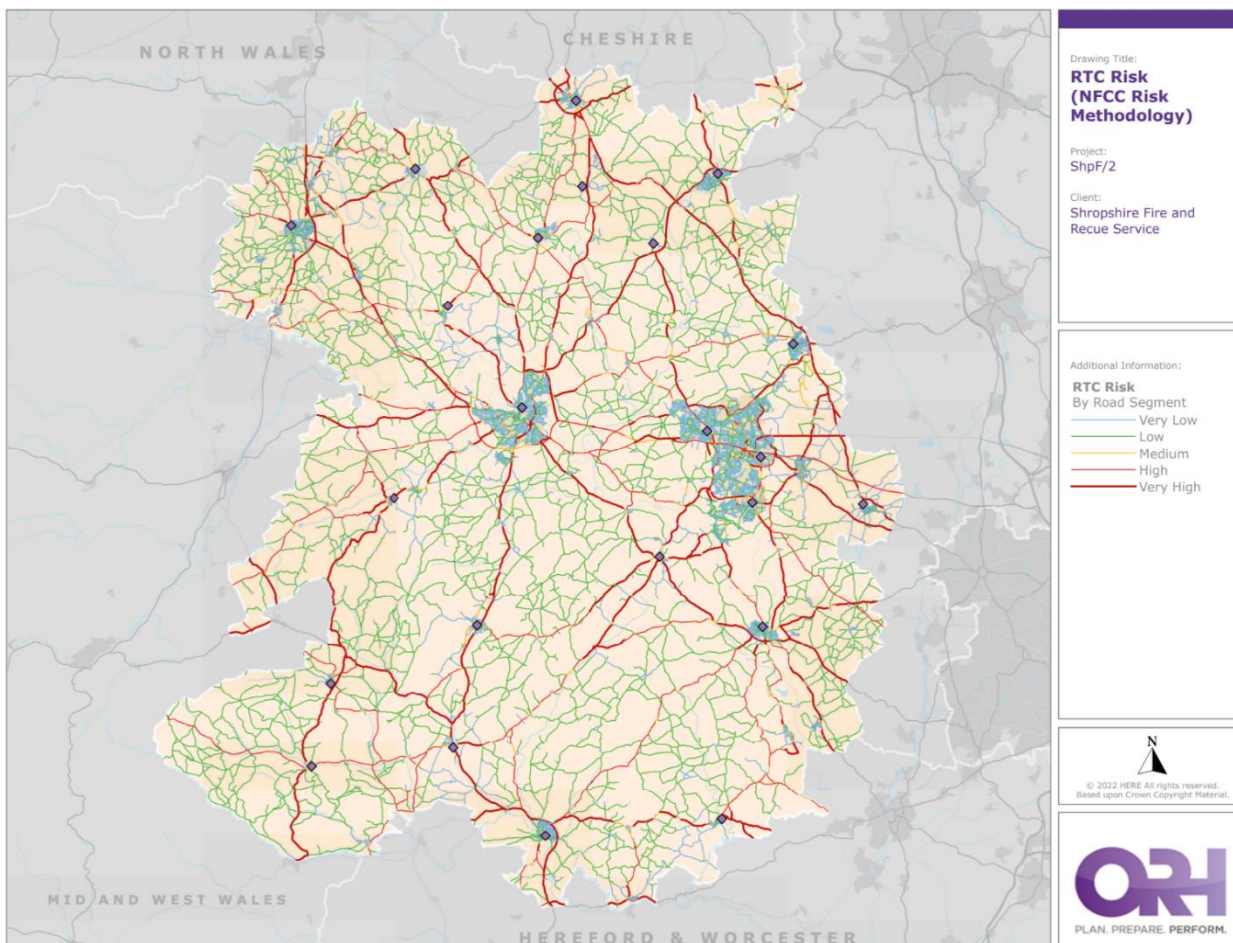
The emerging risk of wildfires is currently being considered by the NFCC and National Fire Data Collection System to provide an increased data source for risk analysis. Once this is available SFRS will further monitor and review wildfire risk analysis.

## Road Traffic Collisions

### **Risk Category**

Incidents involving road traffic collisions have a significant impact on the communities and lives of Shropshire residents.

The image below shows the RTC risk distribution across the Shropshire road network.



**Likely to be beyond normal, but foreseeable risk.** RTC has a Medium likelihood score, Very High Individual consequence score, this results in a High rating under risk analysis.

RTC has been highlighted under risk analysis as an emerging risk, a review of ambulance response times identifies an increase in time at RTC incidents without clinical care. This trend appears to be one that will further impact on the consequences of RTC's within the community resulting in serious injuries and deaths.

### Hazard Type

This hazard type represents a foreseeable **high** risk that SFRS manage on an ongoing basis.

The image below shows the NFCC RTC Risk Category. The Hazardous Event, Road Traffic Collisions, are recorded as an operational Risk Category.

### Image: NFCC RTC Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Transport	Road	Road Traffic Collision

### Statutory duty

SFRS is required by The Fire and Rescue Services Act to rescue people in the event of road traffic accidents, to make provision for protecting people from harm and ensuring we have the resources necessary to meet all normal requirements.

### Likelihood

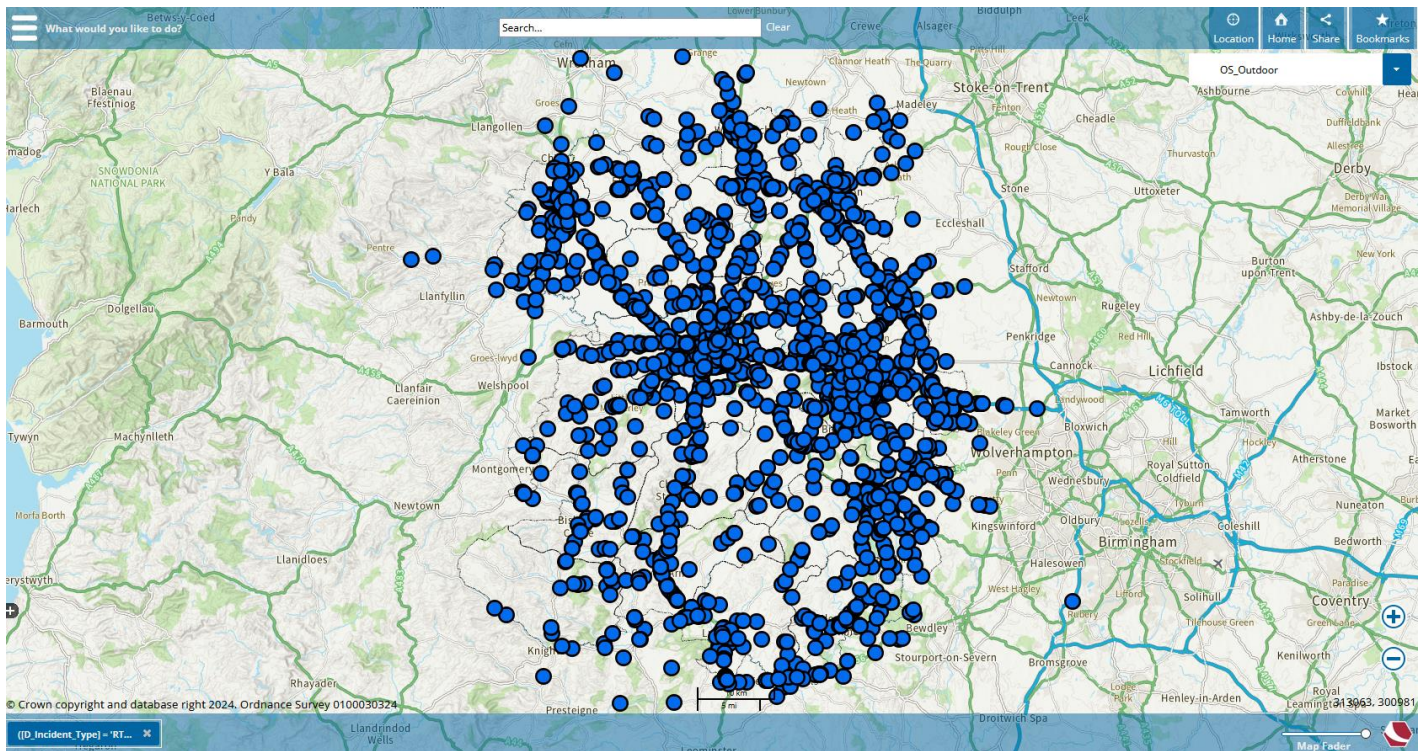
Shropshire has a marginally higher RTC rate per 100,000 people compared to the national average.

In Shropshire, the RTC rate is marginally higher (5.902, compared to 5.251 incident rate), suggesting that incidents involving innocent individuals are more frequent. This disparity can be attributed to factors such as the rural nature of Shropshire, varying road conditions, and potentially less stringent traffic enforcement compared to urban areas.

National statistics show a decline in overall casualties by 12% from 2019 to 2022, but fatality rates have seen a slight increase of 2% during the same period ([GOV.UK](#)). This indicates that while traffic management initiatives are generally improving safety, specific areas like Shropshire may require targeted interventions to reduce higher local RTC rates. ([GOV.UK](#)).

Over the 7 year period to April 2024 we attended 3899 road safety incidents in the county. The image below shows the location of these incidents which are concentrated in our urban areas, and along main roads through the county, including the M54, A41, A5 and A49. In contrast to most of our other incident types, we see the highest number of road traffic accident call outs in the Shrewsbury, Telford and Wrekin area. This is likely to be due to a combination of the number of roads in the area due to its size, and the higher risk road types in the area, including the M54, A5 and A49 which are both fast A-roads which have a high casualty and fatality risk. We attend more incidents on motorways per mile than other road types.

### Image: RTCs attended in Shropshire



## Consequence

Over the past seven years, Shropshire's annualized RTC fatality/injury rate is 54.04 per 100,000 people, significantly higher than the national average of 34.70 per 100,000. With Shropshire's rate surpassing the highest consequence threshold (48.59 per 100,000), the likelihood of RTC fatalities/injuries occurring is rated as "Very High" (VH). This comparison indicates a critical need for enhanced road safety measures in Shropshire to address the elevated RTC rates and mitigate the associated risks.

## Risk Groups

Incidents on our roads have a big impact on communities and lives of Shropshire residents causing disruption to local infrastructure, serious injuries and deaths. Road Traffic Collisions also represent a significant risk to responding crews of injury, psychological trauma and death.

Risk Group	Explanation
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Individual	An individual or small group of individuals pedestrians or within a vehicle who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position. RTCs also cause disruption to the local road network and infrastructure which has a significant economic impact on Shropshire

## Management of Risk

Current control measures include the mobilisation of 2 appliances and a specialist Rescue Tender to RTCs. An additional appliance is mobilised to the unaffected carriageway of the motorway. The Service has also set the requirement for all wholtime firefighters to maintain the First Response Emergency Care (FREC) qualification as part of their role. Finally, a prevention strategy is coordinated by the Road and Water safety Officer this results in safety campaigns and community engagement through social media and events.

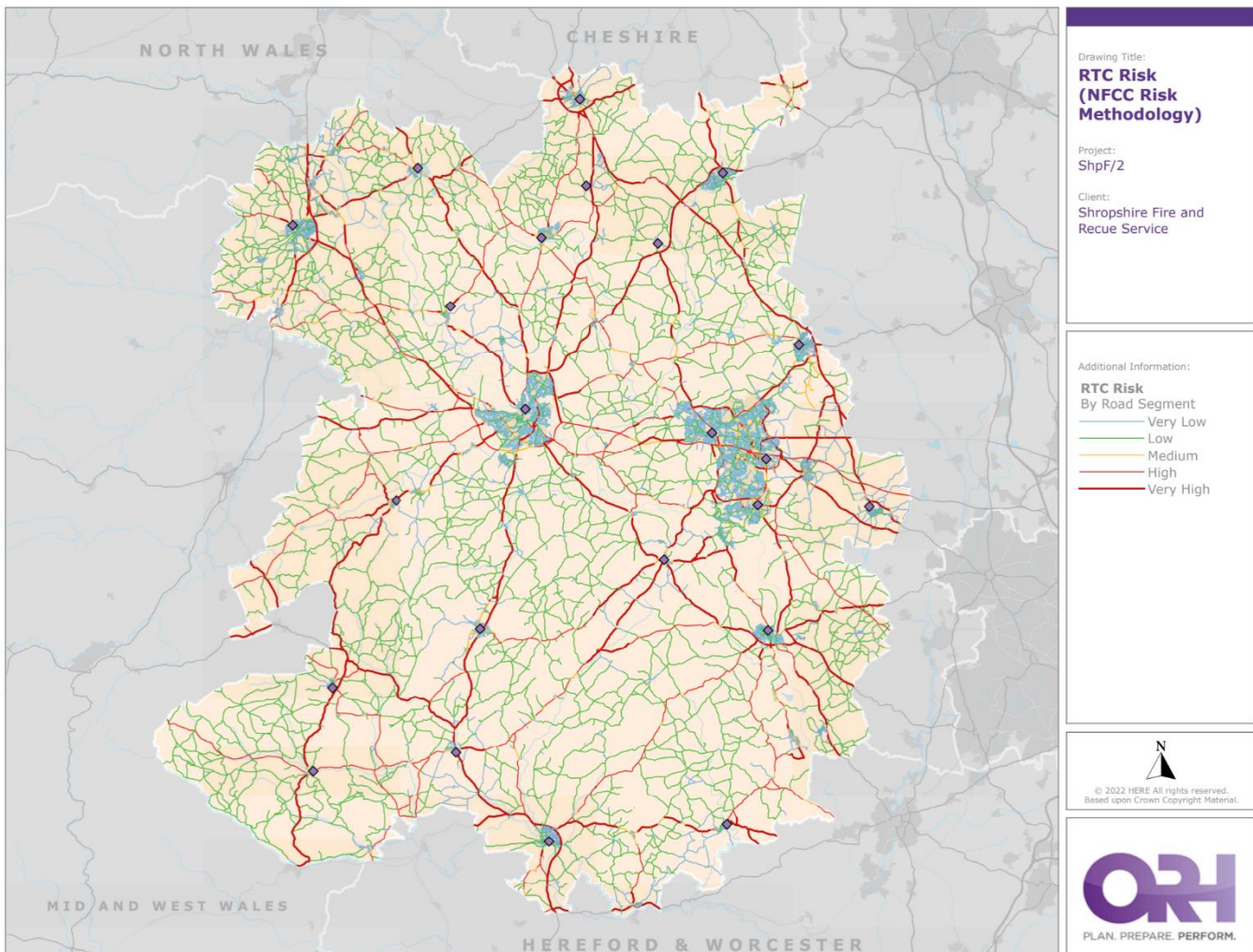
Due to the nature of road travel, many of those who are casualties on our roads will not live near the location of the incident, and many may not be Shropshire residents. However, we can further help reduce the harm at RTC incidents in Shropshire by targeting those residents who are in higher risk demographic groups. Some of these higher risk factors are outlined above. The Department for Transport (DfT) analysis indicates that a higher proportion of road casualties live in areas of high deprivation than low deprivation, as measured by the Indices of Multiple Deprivation (IMD).

To support the development of CRMP 2025-29 an RTC Risk Evaluation is being reviewed. The aim of the RTC RISK Evaluation is to critically assess the effectiveness and efficiency of Shropshire Fire and Rescue Service's (SFRS) response to road traffic collisions (RTCs). This includes an analysis of the associated risks, the current operational demand, and the strategies in place for prevention and response. Additionally, the evaluation will consider the coordination and integration with other emergency services, benchmarking against national guidance and standards. The ultimate objective is to identify strengths, gaps, and opportunities for improvement to enhance the overall safety and effectiveness of SFRS's RTC response operations.



## NFCC RTC risk methodology

The recently published UK National Fire Chiefs Council (NFCC) Road Traffic Collision (RTC) Risk Methodology is designed to standardise risk assessment for road traffic collisions across UK Fire and Rescue Services (FRSs). This evidence-based tool supports FRSs in their community risk management planning by providing a consistent approach to understanding the risk, likelihood, and consequences of RTCs. The methodology aims to enhance preparedness, prevention, and response strategies and encourages collaboration among road safety partners. It integrates data-led risk identification to support local decision-making and national comparisons, fostering a unified and coordinated approach to road safety ([NFCC](#))



## Rescue from Water

SFRS is increasingly called to incidents involving rivers like the Severn and the Tern as well as the Shropshire Union Canal, local pools and lakes. Responding crews are involved in the rescue or recovery of people and animals and protecting infrastructure and the environment.

Many of the water incidents that SFRS respond to are mobilisations to suicide attempts, a significant proportion of these involve the infrastructure around the County's waterways like bridges and aqueducts.

### Risk Category

**Likely to be very high, but foreseeable risk.** Rescues or evacuation from water has a Very High likelihood score, Very High Individual consequence score, this results in a Very High rating under risk analysis.

Recent media reports highlight the addition of bathing water status of the Rivers Severn in Shrewsbury and Ironbridge, and the Teme in Ludlow. This is expected to increase in water recreational activity for Shropshire.

The image below shows the NFCC Water Rescue Risk Category. The Hazardous Event, Water Rescue, are recorded as an operational Risk Category.

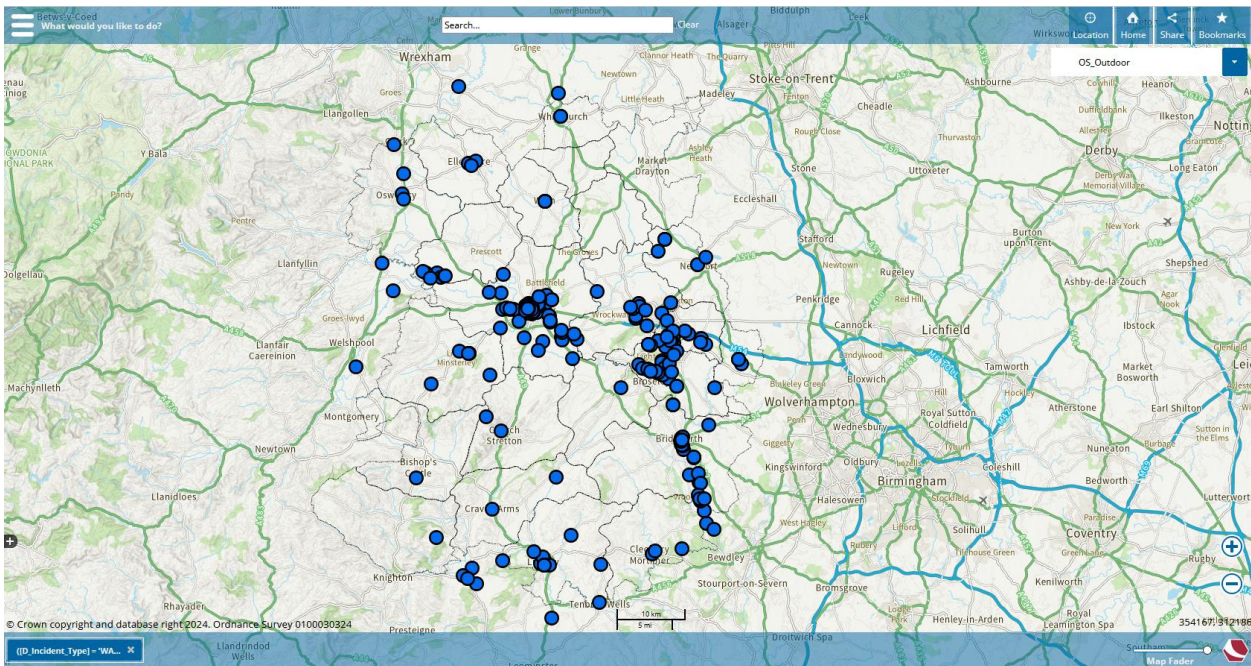
Image: NFCC Water Rescue Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Environmental	Waterways	Water rescue
Transport	Marine	Water rescue

## Hazard Type

Over the 7 year period to April 2024, we attended 200 rescue or evacuation from water incidents in the county. The below image shows the location of these incidents which are concentrated along the River Severn in Shrewsbury, Ironbridge and Bridgnorth. This is likely to be due to a combination of ease of accessibility, urban population density and increased nighttime economy and recreational activities.

Image: Location of water incidents



## Likelihood

In Shropshire, the evacuations and rescues from water incident rate is notably higher than for England (0.570, compared to 0.237 incident rate\*), suggesting that incidents involving water rescues are more frequent than the national average.

The suicide attempts rate is marginally higher than for England (0.43, compared to 0.4) suggesting that incidents involving suicide attempts are more frequent than the national average.

In the year ending March 2024, FRS in England performed 2,409 rescues or evacuations from water. This was the highest figure since the online Incident Reporting System was introduced in the 2009/10 reporting year and represented an increase of 73% compared to the year ending March 2023. Whilst the number of water related incidents each year can vary depending on numerous factors, such as the frequency and severity of storms and heatwaves, the average number of rescues or evacuations from water has steadily increased on average. In the five years ending March 2019, there were 1,028 rescues or evacuations from water on average each year. This compares to an average of 1,740 each year in the following five-year period, a substantial increase of 69%.

Shropshire's water incidents have mirrored the national trend, data analysis indicates a progressive increase in water incidents attended. This resulted in a peak of 50 incidents in 2019/20 nearly double the mean average.

Climate projections also indicate that, on average, winters will become wetter, and summers will become drier. However, rain that does fall in the summer is likely to be more intense which will impact on the frequency and severity of flash flooding, particularly in urban areas. Increased rainfall will make terrains more hazardous, resulting in the potential for more slips and falls into water.

Hotter summer temperatures are likely to result in more people participating in water-based leisure activities or entering the water to cool down, which will also heighten water safety risks. The summer of 2022 was the hottest on record for the UK, and recreational activities accounted for 58% of accidental drowning fatalities in 2022.

## **Consequence**

Over the past seven years, Shropshire's annualized other fatality/injury rate (which mainly comprised of water incidents) is 2.07 per 100,000 people, significantly higher than the national average of 0.82 per 100,000. This likelihood of other fatalities/injuries occurring is rated as "Very High" (VH).

The suicide attempts consequence is significantly higher in Shropshire when compared to England with 1.819 fatalities/ injuries recorded in Shropshire and 1.073 for England per 100,000. This likelihood of other fatalities/ injuries occurring is rated as "Very High" (VH).

## **Risk Groups**

Incidents in water have a significant impact on communities and lives of Shropshire residents causing serious injuries and deaths. Nationally, accidental fatalities in water are much more common amongst males who accounted for 83% of accidental water fatalities in 2023.

Water incidents also represent a significant risk to responding crews of injury, psychological trauma and death.

Risk Group	Explanation
Individual	An individual or small group of individuals within location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.

### Management of Risk

To manage the risk from water incidents SFRS has a provision of Water First Responders at strategic locations, Swiftwater Rescue Technicians and a rescue boat in Shrewsbury. The Service also supports Prevention activities with the provision of a Road and Water Safety Officer who coordinates campaigns, events and public messaging.

To support the development of CRMP 2025-29 the Service has committed to a Water Rescue Capability Review. This review will focus on reviewing the water rescue & delivery capabilities of the service. This review assesses the current equipment, training programs, and protocols related to water rescue and flooding operations. It identifies any gaps or deficiencies and proposes recommendations for enhancing safety and operational efficiency in this area.

# Flooding

In Shropshire, the flooding incident rate is marginally lower than for England (1.743, compared to 2.731 incident rate), suggesting that incidents involving flooding are less frequent than the national average.

Coastal, fluvial, and surface water flooding are identified as significant risks facing the UK on the 2023 National Risk Register. The National Audit Office (NAO) 2023 report on Government resilience to extreme weather identifies that around 5.7 million properties are at risk of flooding in England and that key infrastructure is at risk. The number of UK drowning deaths remains higher than deaths in fires, and the frequency and magnitude of flooding events is expected to continue to increase in the UK due to climate change.

In Shropshire, communities in Ironbridge, Shrewsbury, Molverley are routinely impacted by seasonal flooding events.

## Risk Category

**Likely to be high, but foreseeable risk.** Flooding has a Low likelihood score, Very High Individual consequence score, this results in a High rating under risk analysis.

The image below shows the NFCC Flooding Risk Category. The Hazardous Event, Flooding, are recorded as an operational Risk Category.

### Image: NFCC Flooding Risk Category

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Environmental	Waterways	Flooding
Emerging/ foreseeable	Climate Change	Flooding
People and Behaviours		Flooding

## Likelihood

In Shropshire, the flooding incident rate is notably lower than for England (1.743, compared to 2.731 incident rate), suggesting that incidents involving flooding are less frequent than the national average.

## Consequence

Over the past five years, Shropshire's annualized flooding and water rescue fatalities and injuries rate is 2.0795 per 100,000 people, significantly higher than the national average of 0.8267 per 100,000. This likelihood of other fatalities/injuries occurring is rated as "Very High" (VH).

## Risk Groups

Incidents in water have a significant impact on disruption to infrastructure, communities and lives of Shropshire residents causing serious injuries and deaths.

Water incidents also represent a significant risk to responding crews of injury, psychological trauma and death.

Risk Group	Explanation
Individual	An individual or small group of individuals within location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.

## Management of Risk

To manage the risk from water incidents SFRS has a provision of Water First Responders at strategic locations, Swiftwater Rescue Technicians and a rescue boat in Shrewsbury. The Service also supports Prevention activities with the provision of a Road and Water Safety Officer who coordinates campaigns, events and public messaging.

To support the development of CRMP 2025-29 the Service has committed to a Wide Area Flooding Capability Review. The review will take into account multiple factors. Firstly, it will analyse historical

incident data to identify patterns, trends, and areas for improvement. This analysis will provide valuable insights to inform our decision-making process and guide the development of strategies aimed at enhancing our response capabilities. Additionally, it will carefully review the existing plans and guidelines provided by the Environment Agency (EA) to ensure that our response aligns with national water rescue standards and incorporates best practices. Furthermore, a thorough evaluation of the current training programs will be conducted to ensure that the service personnel receive the necessary skills and knowledge required for effective water rescue operations.

To assess the impact of flooding in Shrewsbury, SFRS reviewed two scenarios which occur in times of flood:

- Scenario 1 involves removing vehicle access to the area highlighted in green
- Scenario 2 involves removing vehicle access to the area highlighted in blue, which in turn removes access to the green area



These flooding scenarios identified a significant impact to response times indicated in the image below of up to 27.15 increased response times for flooding scenario 2 and 10.7% increased response times for flooding scenario 1.



### SFRS-Wide Summary

Scenario	Average Response Time		% within Target Time		
	1st	2nd	Urban	Town and Fringe	Rural
Base	09:44	13:33	80.2%	82.3%	88.5%
Flooding Scenario 1	00:12	00:13	-3.4%	-0.4%	-0.6%
Flooding Scenario 2	00:35	00:32	-9.1%	-1.7%	-1.0%

### Shropshire Central District Summary

Scenario	Average Response Time		% within Target Time		
	1st	2nd	10 mins	15 mins	20 mins
Base	09:29	10:42	61.8%	88.0%	97.5%
Flooding Scenario 1	00:56	00:54	-10.7%	-4.9%	-0.9%
Flooding Scenario 2	02:34	02:17	-27.1%	-14.2%	-2.2%

The results of the optimal modelling of base locations in Shrewsbury is to be considered further in the Shrewsbury Assets Review.

## Hazardous Materials

Hazardous materials are found throughout our communities and normally are safe and well controlled, however, it is foreseeable that there will be both accidental and deliberate releases of hazardous materials into the environment that will be respond to by the emergency services. The vast majority of these incidents are small in scale or have limited impact. Some incidents have larger or more complex impacts requiring a multi-agency response such as large scale chemical, biological, radiological, nuclear or explosive (CBRN(e) emergencies) are foreseeable but beyond normal risk.

The term hazardous materials means a substance that can harm people, animals, other living organisms, property or the environment. They include materials that are:

- Toxic
- Radioactive
- Flammable
- Explosive
- Corrosive
- Oxidisers
- Asphyxiates
- Biohazards

Shropshire has a large number of commercial premises that utilise materials in their processes that have hazardous properties. This ranges from premises storing and using small quantities of hazardous materials to large, regulated sites and installations. Shropshire has two upper/lower tier Control of Major Accident Hazard Regulations (COMAH) sites. There are multiple regulated waste handling and processing sites in Shropshire. Note that hazardous materials are not exclusively found in commercial premises and are also encountered in domestic settings although usually in small quantities.

**Risk Category**

**Likely to be low, but foreseeable risk.** Hazardous material has a very low likelihood score, Low Individual consequence score, this results in a Very Low rating under risk analysis.

**Hazard Type**

Small scale hazmat incidents are foreseeable, routine incidents, and are considered normal risk.

The table below shows the NFCC Wildfire Risk Category. The Hazardous Event, Wildfires, are recorded as an operational Risk Category.

**Image: NFCC Wildfire Risk Category**

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Industrial	Hazmat Sites	Fire involving hazmats
Industrial	Hazmat Sites	Explosion
Industrial	Hazmat Sites	Release Leak/ Spillage
Industrial	Hazmat Transport	Road Traffic Accidents
Industrial	Hazmat Transport	Vehicle Fires
Industrial	Hazmat Transport	Product Spillage
Terrorism	Chemical Biological, Radiological or Nuclear (CBRN)	Hazardous spillage
People and Behaviours	Chemical Biological, Radiological or Nuclear (CBRN)	Widespread spillage

People and Behaviours	Chemical Biological, Radiological or Nuclear (CBRN)	Toxic Pollution
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### Statutory duty

Yes, fires, road traffic collisions and other emergencies as per duties in FRSA 2004. Section 11 of the FRSA 2004 also applies as does Section 2 The Fire and Rescue Services (Emergencies) (England) Order 2007. There are further wide reaching legal duties in the Civil Contingencies Act 2004 that set out our duties in relation to emergencies.

SFRS must take all practicable steps to prevent environmental damage as a result of its activities including where there is an imminent threat of damage occurring or where some damage has already occurred and there is a threat of further damage.

### Likelihood

In Shropshire, the Hazardous Materials incident rate is notably lower than for England (0.174, compared to 0.537 incident rate\*), suggesting that incidents involving hazardous materials are less frequent than the national average.

There were just under 607 hazmat incidents in the 7 year analysis period. The majority of these were gas release and leaks, small hazmat incidents and vehicles leaking fuel.

The National Risk Register and National Security Risk Assessment highlight the threat of hazardous materials and Chemical, Biological, Radiological and Nuclear (CBRN) incidents and drive our requirement to engage with National Resilience arrangements for mass decontamination and chemical detection, identification and monitoring

### Consequence

Incidents involving hazardous materials have a range of potential consequences depending on the quantity, location and nature of the material involved. Examples of routine incidents include:

- Fuel leaking from vehicle

- Containment of fire water run off
- Incorrect mixing of swimming pool chemicals
- Fires involving limited quantities of compressed gases such as liquefied petroleum gas
- Chemical spillage following road traffic collision

These normal risk incident types generally have a localised impact.

Hazardous material incidents may have wider and longer lasting ramifications that require a longer term or larger deployment of resources to mitigate the risk.

## Risk Groups

Risk Group	Explanation
Individual	People who live, work or commute to or through Shropshire. People who travel through Shropshire. People who visit Shropshire for tourism and leisure.
Community	Incidents generally located within buildings or road vehicles. Hazmat incidents can result in significant cordons being put in place. These can necessitate road closures and evacuations. Potential for significant property damage. Economic losses caused by hazardous material incidents are related to the location and extent of the incident and the materials involved. Cordons can disrupt road and rail travel and impact on the economy at a regional level leading with the potential for widespread disruption. The mitigation of environmental damage can carry high costs.
Environment	Environmental impact depends on the nature of the substance involved. They may be low where containment and mitigation are easily achieved. May result in significant damage where watercourses, protected habitats or SSSIs are impacted. Low likelihood high consequence CBRN(E) incidents may result in both acute and chronic environmental harm.
Emergency Responders	Emergency responders risk of injury or death

## Management of Risk

Due to the technical nature of hazardous materials operations, SFRS ensures that responders have access to the appropriate advice, equipment, skills, knowledge and understanding to maintain safety. All SFRS firefighters are trained to respond to hazardous materials incidents and every fire appliance carries hazardous materials personal protective equipment and environmental protection equipment. These crews form our initial operational response. Incident commanders can access hazardous

materials information sources, via Mobile Data Terminals on all appliances. Additional SFRS resources include:

- One Hazardous Materials Advisor (HMA) is on duty at all times – these officers provide specialist advice to the on-scene commander and, where appropriate, tactical and strategic coordinating groups.
- Deployable hazardous materials and environmental protection equipment held at Tweedale Fire Station.
- Atmospheric Monitoring – enables known substances to be quickly and accurately measured and identified enabling appropriate response actions to be put in place.

When SFRS visits premises to carry out operational information gathering we ensure we make accurate records of the presence of hazardous materials for firefighter safety and environmental protection.

Fire Safety Inspecting Officers will provide advice to landlords and premises managers which relates to the storage of flammable goods and may enforce fire safety law where they find breaches of the law.

SFRS can also access regional and national assets to support our response at larger or more complex incidents as part of specialist operational response.

## Non RTC transport incidents

Other transport includes rail, waterways and air incidents. These incidents occur infrequently in Shropshire however the impact can be substantial.

Likely to be normal, **Medium** risk. Other Transport incidents has a Very High likelihood score, and no associated Individual consequence score, this results in a Medium rating under risk analysis.

### Hazard Type

This hazard type represents a foreseeable, medium risk that SFRS manage on an ongoing basis.

The image below shows the NFCC Other Transport Risk Category. The Hazardous Event, Other Transport Incident, is recorded as an operational Risk Category.

Identify Hazards (Community)	Operational Risk Category	Hazardous Event
Transport	Rail	Collisions

Transport	Air	Air Traffic Accident
Transport	Rail	Track Intrusion

### Statutory duty

SFRS is required to attend emergencies as per duties in FRSA 2004. The Fire and Rescue Services (Emergencies) (England) Order 2007 requires SFRS, to make provision for the purpose of rescuing people who may be trapped and protecting them from serious harm, to the extent that it considers it reasonable to do so, in the event of an emergency which involves a train, or aircraft, and is likely to require a fire and rescue authority to use its resources beyond the scope of its day to day operations.

### Likelihood

Shropshire has a number of commercial airfields with the most active at Sleaford and RAF stations at Shawbury, Cosford and Tern Hill. Shropshire also has 19 mainline train stations. The Air Accident Investigation Branch has published 18 investigation reports relating to reportable incidents in Shropshire in the last 12 years.

In Shropshire, the other transport incident rate is very (0.385, compared to 0.207 incident rate) suggesting that incidents involving other transport methods are more frequent.

### Consequence

Injuries and fatalities, ranging from single figures to the low hundreds depending on incident circumstances and rail/ aircraft type involved. Economic loss and environmental damage.

### Risk Groups

Risk Group	Explanation
Individual	People who live, work or commute to or through Shropshire. People who travel through Shropshire. People who visit Shropshire for tourism and leisure.
Community	Incidents generally located within buildings or other vehicles. Rail and air incidents can result in significant cordons being put in place.

	These can necessitate road closures and evacuations. Potential for significant property damage. Potential for significant economic loss due to disruption of air transport, damage to infrastructure, litigation and insurance claims
Environment	Environmental impacts due cargo, aircraft construction material and fuel.
Emergency Responders	Emergency responders risk of injury or death

## Management of Risk

Firefighters receive training in how to respond safely to incidents involving aircraft. Provision of rescue and firefighting equipment suitable for incidents involving aircraft. Operational familiarisation visits to aerodromes and liaison with aerodrome firefighting teams.

SFRS will mobilise the specialist heavy rescue tender resources to aircraft and rail incidents

## Animal Rescue

### Risk Category

**Likely to be low, but foreseeable risk.** Animal rescues has a Medium likelihood score, Very Low Individual consequence score, this results in a Low rating under risk analysis.

### Hazard Type

The rescue or evacuation of small and large animals in distress. May be from water, above or below ground. Protecting owner or well-intentioned members of the public from personal harm. Animals in transit may be involved in road traffic collisions. Shropshire is a predominantly rural community with a high level of agriculture and equine industry.

### Statutory duty

No. The owner is legally regarded as being responsible for it. However, FRS personnel can be responsible for the animal on a temporary basis if they are safeguarding an animal's welfare at an incident as set out in the Animal Welfare Act 2006.

## Likelihood

Incidents involving animal rescues happen relatively frequently, with around 395 incidents of small and large animal rescues (including rescues from water) over the 7 year period we have examined in our analysis.

In Shropshire, the animal rescue incident rate is marginally higher than for England (1.125, compared to 0.916 incident rate\*), suggesting that incidents involving animal rescues are more frequent than the national average.

## Risk Groups

Risk Group	Explanation
Individual	Animal owners, vets, members of the public
Community	There is the potential for structural damage to property when animals are trapped within structures Economic losses are generally low risk, this may be relevant where incidents involve a valuable animal or large numbers of livestock in transit.
Environment	Not applicable
Emergency Responders	Emergency responders risk of injury or death

## Management of Risk

SFRS staff receive training in animal rescue. Appliances have equipment for working at height and safe systems of work for working in, on or near bodies of water. Operational crews will undertake risk familiarisation visits which may include gaining information about the presence of animals on site.

A specialist animal rescue unit is located at Wellington fire station.

To support the development of CRMP 2025-29 the Service will incorporate the considerations previously highlighted in the Rescue Capability Review. This review has assessed the current equipment, training programs, and protocols related to animal rescue operations. It has identified any gaps or deficiencies and propose recommendations for enhancing safety and operational efficiency in this area.



## Rescue from height and confined space

Rescues from height can include above or below surface level operations where a person may be at risk of harm from a fall. Where an incident involves a substantially enclosed space with a specified hazard of free flowing liquids, free flowing solids, explosion, asphyxiation due to atmosphere, or an individual becoming unconscious due to heat then the confined space regulations also apply. Confined space incidents occur in many locations like tankers, mines, vats, pits, silos, sewers and require specialist resources to manage safely and in accordance with the legislation.

NFCC guidance, team typing

Outdoor activity, tourism

### **Risk Category**

**Likely to be Medium, but foreseeable risk.** Incidents frequently involve rescues from height or confined space and these are typically recorded in another way as a carbon monoxide alarm activation, animal rescue, assist other agency, or other rescue of persons trapped.

### **Hazard Type**

The rescue of persons (and by occasion, animals) who are at risk of a fall from height. The risks of participating in these heavily legislated activities is severe for both the individual and emergency responders. Shropshire's increasing industrial commerce and industrial heritage has resulted in an increased likelihood of rescue incidents involving mines, pits, scaffolding, cranes, and silos.

### **Statutory duty**

The Work at Height Regulations 2005 (WAHR) and Confined Space Regulations 2007 require employers and those in control of any work at height activity must make sure work is properly planned, supervised and carried out by competent people. This includes using the right type of equipment for working at height and ensuring a rescue plan is in place. It is not the duty of emergency services to rescue a worker who has fallen from a height, although they may be contacted in order to offer medical assistance to the individual who has fallen.

SFRS does have a duty to its employees to ensure its own safe systems of work are in place for its staff who are required to work at height under The Health and Safety at Work etc. Act 1974 and associated Regulations. This includes undertaking rescues of persons involved in emergency incidents.

### **Likelihood**

Incidents involving working at height are commonplace and routine for SFRS staff. Rescues from height are less well documented as they tend to be recorded as other incident types.

Recognising the increased likelihood of rescues from height the NFCC has published suitable guidance and Team Typing document to classify the skills, training and resources required to form different levels of working at height, rope access and stabilization and rope rescue teams.

### Consequence

Falls from height resulting in injury or death, generally of an individual. Rescues from height are typically low frequency high risk incidents, recent HSE investigations and Joint Operational Learning debriefs have highlighted the importance of the appropriate safe systems of work at these incidents.

### Risk Groups

Risk Group	Explanation
Individual	Members of the public, including visitors and tourist to Shropshire
Community	May occur at numerous locations across Shropshire, such as building sites (including tower cranes and on temporary structures), at commercial and domestic premises, tourist destinations, persons threatening suicide from tall structures, during emergency response to fires, at RTCs in elevated positions. Limited economic impact
Environment	Limited environmental impact
Emergency Responders	Emergency responders risk of injury or death

### Management of Risk

SFRS trains its operational staff in safe working at height as part of core firefighter training. A range of suitable working at height equipment is provided, including ladders, lines, harnesses and an aerial appliance based at Telford Central and Shrewsbury fire station.

Risk familiarisation visits are undertaken to improve firefighter's awareness of hazards and liaison with responsible persons is undertaken during these visits where firefighter risk is identified.

To support the development of CRMP 2025-29 the Service has committed to a Technical Rescue Capability Review. This review will assess the current equipment, training programs, and protocols related to working at height and confined space operations. It will identify any gaps or deficiencies and propose recommendations for enhancing safety and operational efficiency in this area.

The Aerial Ladder Platform capability review assesses the current equipment, training programs, and protocols related to working at height operations and medium/ high rise firefighting operations. It identifies any gaps or deficiencies and proposes recommendations for enhancing safety and operational efficiency in this area.

## New and Emerging Risk

SFRS uses horizon scanning to consider the potential impact of new and emerging risks. This helps us to think about how we may need to change and adapt our services to provide the best possible fire and rescue service for Shropshire.

We review a variety of sources:

- News coverage of local, national and international events
- National Fire Chief's Council's document "Fit for the Future"
- National Police Chief's document "Police Futures"
- National Standards for Fire and Rescue Services
- Insight delivered through the National Incident Liaison Officer network
- Shropshire Council development and risk management plans
- Telford and Wrekin Council development and risk management plans
- Data from the Office of National Statistics, including census information
- Insights from professional organisations such as ORH
- The national risk register produced by the government
- The community risk register produced by the West Mercia Local Resilience Forum
- The outcomes of our public and partner agency consultations
- Local and national incident data
- His Majesty's Inspectorate of Constabularies and Fire and Rescue Services' annual "State of Fire" report, and FRS inspection reports including our own

Issues we identify during our horizon scanning process are discussed by our Senior Leadership Team in order to inform long term organisational development. Many of the issues raised will take longer than the duration of this CRMP to be realised. Others may have more short term impacts.

## Climate Change

Climate change refers to long-term global shifts in temperatures and weather patterns. Since the 1800s, human activities have been the main driver of climate change, primarily due to greenhouse gas emissions. The Earth is now about 1.1°C warmer than it was in the late 1800s. The last decade (2011-2020) was the warmest on record. Provisional figures show the summer of 2022, covering June, July and August, had an average temperature of 17.1C, tying with 2018 to be the warmest on record. Four of the five warmest summers on record for England have occurred since 2003, as the effect of human-induced climate change is felt on the country's summer temperatures. The summer months of 2022 represented the busiest period experienced by SFRS over the reporting period of this CRMP (representing 7 years of data analysis). The NFCC and Met Office, has indicated that future UK rises in average temperature will increase the dangers of wildfires. Climate change acts as a risk multiplier for SFRS. Extreme weather events place extra demand on resources, increasing the likelihood of spate conditions, the severity of individual incidents and degrading our ability to respond to incidents across the County.

The consequences of climate change include, among others, intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity. With increasing global warming, compound, low likelihood, or unprecedented extremes such as the European dry and hot summers of 2018 and 2022 or the extreme rainfall following storm Desmond in the UK in 2015, become more frequent. A recent UN report stated that precipitation has raised river flood hazards in the UK by 11% per decade from 1960 to 2010. Storm Dennis triggered a national fire service response to the wide spread flooding caused by the storm and in 2018 there was a significant increase in secondary fires linked to a hot, dry summer.

In terms of managing the impacts of climate change (both in respect to mitigation and adaptation) SFRS faces a challenge insomuch as not only do we need to manage and maintain our own assets and resources when faced with extreme events but we are also expected to mobilise those assets and resources promptly and effectively in order to intervene and help the public, businesses and communities when their own plans have failed. Our primary role is to help others in emergency situations when they are struggling to help themselves.

The NFCC expected FRSs will continue to build on already well-established policies, procedures, plans, capabilities and partnerships with other emergency services, the Environment Agency, councils, the NHS, utility companies and the voluntary and community sector. These will not only be focused on dealing with extreme weather events when they occur but also on the subsequent combined efforts of Local Resilience Forums to return their communities back to normality after the emergency phase of any incident has subsided.

The anticipated increase in likelihood and consequence of climate change related incidents and the related health and wellbeing impacts both on people's physical and mental health means that SFRS will continue to play a key collaborative role with partners at both local and regional resilience levels.

## Climate change emerging threats review- Water Availability, Wide Area Flooding, Wildfire Capability

Wide Area Flooding- The review will consider multiple factors. Firstly, it will analyse historical incident data to identify patterns, trends, and areas for improvement. This analysis will provide valuable insights to inform our decision-making process and guide the development of strategies aimed at enhancing our response capabilities. Additionally, it will carefully review the existing plans and guidelines provided by the Environment Agency (EA) to ensure that our response aligns with national water rescue standards and incorporates best practices. Furthermore, a thorough evaluation of the current training programs will be conducted to ensure that the service personnel receive the necessary skills and knowledge required for effective water rescue operations.

Water Availability- Another work package will focus on reviewing the water delivery capabilities of the service. This review will examine the existing water supply infrastructure, equipment, and procedures for firefighting operations. The goal will be to identify opportunities for improving the efficiency of water delivery, such as exploring new technologies, optimizing water sourcing strategies, and streamlining processes.

Wildfire Capability- In reviewing our fire service's wildfire response, the project will adopt a comprehensive approach that considers several key elements. Firstly, we will analyse historical incident data to gain insights into previous wildfire incidents, including, spread patterns, and response outcomes. This analysis will inform our decision-making process and help identify areas for improvement. Additionally, it will review the wildfire plans provided by Natural England to ensure alignment with their guidelines and recommendations for effective wildfire management. It will also consider national operational guidance specific to wildfire response, incorporating best practices and standardised approaches to ensure consistency across our operations. Furthermore, we will assess the current training programs to ensure that service personnel receive the necessary knowledge and skills required for effective wildfire response. This will include evaluating the availability and condition of our equipment and personal protective equipment (PPE) to ensure that we are properly equipped to handle the unique challenges of wildfires.

### Risk Groups

The risk of wildfire mainly impacts the environment through air pollution, loss of habitat and fire water run off. However, there are associated risks to the community and individuals that may also be harmed.

### Risk Groups

Risk Group	Explanation
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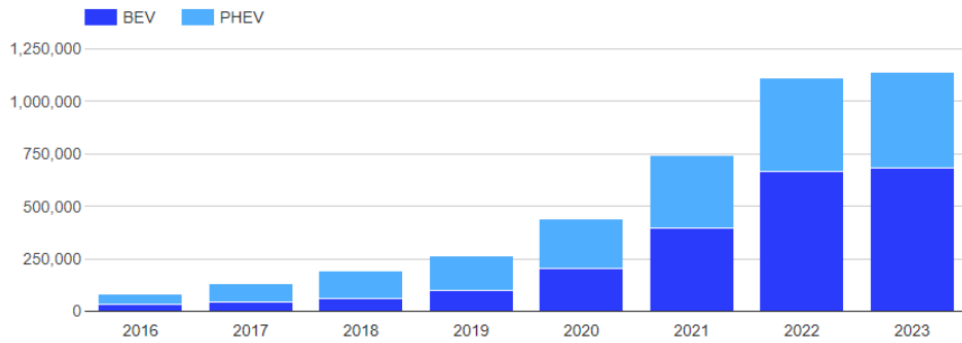
Individual	An individual or small group of individuals within a single premises or location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

## Alternative Energy Systems

### Electric Vehicle Fires

UK Electric vehicle ownership is increasing, the images below show a clear rise in the cumulative number of plug-in cars and battery- electric vans registered in the UK.

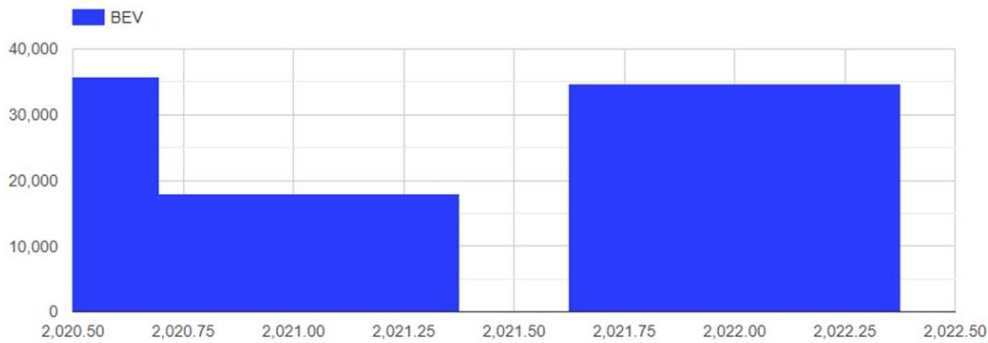
Cumulative number of plug-in cars registered in the UK (2016 to date)



Source: SMMT, January 2023



Cumulative number of battery-electric vans registered in the UK (2020 to date)



Source: SMMT, January 2023

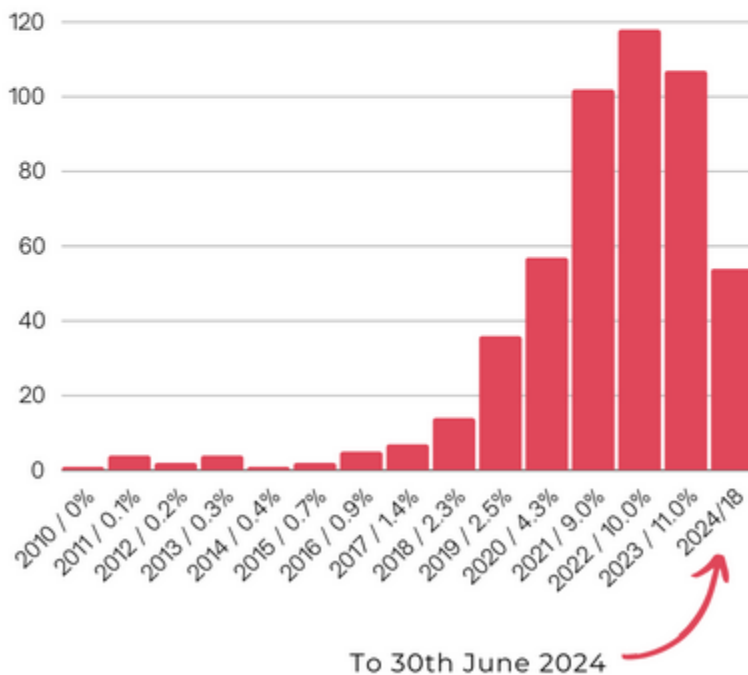


Whilst battery fires in electric cars remain rare, the below graphic shows increases in EV ownership and use has seen an increase in EV battery fire incidents year on year.

## EV BATTERY FIRE INCIDENTS YEAR ON YEAR



Incidents jumped in 2021 and 2022, primarily due to a fault during manufacturing of battery cells that were used in two major brands. The number of incidents dropped slightly in 2023 as those EVs were recalled and battery packs replaced.



Whilst there's a lot yet to be discovered regarding electric vehicle lithium traction battery fires - referred to here as 'traction battery fires' – global, national and SFRS EV Fire incident data analysis evidences the following important considerations:

- Electric vehicles are less likely to catch fire than Internal Combustion Engine (ICE) vehicles
- Thermal runaway is how all EV battery fires start- when a battery cell experiences a short circuit, thermal runaway may occur
- An EV lithium traction battery burns hotter than an ICE vehicle
- Fire behaviour is different and presents new challenges
- Water is the most effective way to extinguish an EV battery fire
- EV battery fires may require more resources- A longer suppression time may mean additional people, appliances and water.
- The location of an EV battery makes fire harder to extinguish



- EV traction battery fires can reignite, hours or days later

## Battery Energy Storage Systems- Grid scale and Domestic

Grid scale Battery Energy Storage Systems (BESS) are a fundamental part of the UK’s move toward a sustainable energy system. The installation of BESS systems both in the UK and around the globe is increasing at an exponential rate. A number of high profile incidents have taken place and learning from these incidents continues to emerge.

Even though few incidents with domestic battery energy storage systems (BESSs) are known in the public domain, the use of large batteries in the domestic environment represents a safety hazard. This report undertakes a review of the technology and its application, in order to understand what further measures might be required to mitigate the risks. The focus is on lithium-ion battery technology, as this now dominates new designs of BESS.

Fortunately, there have been few recorded fires involving EV, domestic and grid scale lithium-ion battery storage systems. SFRS will review the operational requirements to manage this emerging risk and hazards of thermal runaway, rapid pressure build-up and toxicity of gases are also considered within the Lithium Batteries Operational Response Review.

## Risk Groups- EV fires and BESS

Risk Group	Explanation
Individual	An individual or small group of individuals within a single dwelling or location who have the potential for death or injury from the identified hazard
Societal	The potential for multiple injuries or fatalities emerging from the identified hazards
Emergency Responders	Emergency responder risk of death or injury
Environmental	The potential to negatively impact the environment
Community	The potential to create severe consequences for a local community or wider economy. This may be linked to public risk perception, sense of wellbeing, mental health, financial position.
Heritage	Premises or sites of heritage that have the potential for partial or total loss of items or structures

## EV and BESS Fires emerging threats review

Considering the importance of sustainability and environmental responsibility, the project will explore the introduction of a Battery Energy Storage System and Electric Vehicle fire capability. This stage will involve researching and evaluating BESS and EV firefighting resources and their compatibility with the fire service's operations. Cost implications, charging infrastructure requirements, and operational considerations will be considered to determine the feasibility and benefits of operational response.

## Summary

Through data analysis and building an understanding of the ever-evolving risk profile, the following priorities have emerged;

### Meeting the Challenges of a Changing Community

By 2027, Shropshire's ageing population is expected to increase vulnerabilities, and evidence from the Equality Impact Assessment (EQIA) and local authority plans stresses the need to address challenges like poverty, social isolation, and ageing populations.

The dwelling fire hazard carries a medium risk rating for both individuals and responders. Current control measures include the mobilisation of two appliances to all dwelling fires, with an additional appliance dispatched when persons are reported at risk. Shropshire Fire and Rescue Service (SFRS) also requires all wholtime firefighters to hold the First Response Emergency Care (FREC) qualification, ensuring they are equipped to provide emergency care on the scene.

The prevention strategy, overseen by the Prevention Manager, includes targeted safety campaigns, community engagement through Home Fire Safety Visits, and outreach via social media and local events. SFRS's prevention framework is robust and closely aligned with the National Fire Chiefs Council (NFCC) methodologies. It prioritises staff competence and active stakeholder engagement to enhance the effectiveness of risk management and prevention initiatives, ensuring a proactive approach to dwelling fire risk reduction.

## CRMP Proposal to meet the Challenges of a Changing Community

In response to identified risks, it is proposed to further mitigate residential fire risks by fully aligning with the NFCC Dwelling Fire Methodology. This includes focusing on properties and demographics most at risk, using household building data and exploring the application of commercial demographic data. A partnership with Leeds University will enable the use of smart technology for detailed local data analysis, allowing the Service to accurately identify high-risk areas and implement targeted prevention measures. Comprehensive quality assurance and evaluation processes will be embedded to ensure the effectiveness of the strategy, ensuring the Service adapts to evolving community needs while adhering to national best practices.

Further opportunities exist to enhance the strategy by incorporating advanced technologies, improving quality assurance, and expanding partnerships. Integrating AI-driven tools and commercial data sources will refine risk assessments and prevention efforts. The ongoing Dwelling Fire Review will also explore expanding outreach programs to be more inclusive and culturally sensitive, increasing volunteer capacity, and addressing socio-economic factors through collaboration with local authorities. These initiatives will create a more comprehensive and effective prevention strategy.

## Operational Competence

The Service has taken significant steps to minimise risks associated with high-rise buildings, rescues from height, and confined spaces. Following the Grenfell tragedy, high-rise procedures were thoroughly reviewed and amended. This included additional training for operational staff, the development of critical information tracking systems to ensure real-time building data is available during incidents, and an increase in predetermined attendance for high-rise fires to ensure adequate resources are deployed from the outset.

The Service has maintained a robust rescue from height and safe working at height capability for over 15 years, with specialist teams based at each wholetime station. Over time, national training standards and capabilities for height rescues have evolved, and while SFRS maintains a strong response capacity, complex rescues would now require additional support from national resilience teams for more specialised operations.

The Service has maintained core capabilities in Confined space rescue, evolving national training standards have outpaced the service's current provision. As a result, the service's ability to manage complex confined space incidents is now limited, requiring additional external support in the most challenging scenarios.

### CRMP Proposal to meet challenges Operational Competence

In response to the challenges of operational competence, it is proposed the upskilling of a specialised team based in Telford to address critical areas such as rescues from height and confined spaces.

Aligned with the CFO's vision of developing specialisms at each of the wholetime stations, this team will provide a high level of response capability and support other stations, particularly on-call firefighters. The specialised team will be fully equipped to manage emergencies in elevated structures and confined spaces, ensuring the Service can meet evolving safety requirements, adhere to legislation, and respond effectively to local authority development plans, including new high-rise residential and commercial buildings.

This approach will enhance operational readiness and resilience, enabling the Service to manage complex incidents more effectively across the region.

### Adapting to the effects of Climate Change

To meet the increasing risks posed by climate change, the Service has made advancements in its wildfire, water rescue, and water supply capabilities. Wildfire provision has evolved through the investment in off-road vehicles and equipping every appliance with knapsacks for manual fire suppression. Other Services have conducted a comprehensive review and made investments in further equipment, PPE and training.

Over the last 20 years, water and flood rescue capabilities have been strengthened with the establishment of a specialist team in Shrewsbury. However, across the county, water safety and rescue provisions have not always aligned with the specific risks of each station area.

Recognising the scarcity of firefighting water sources, especially during droughts, there has been investment in water movement capabilities. The current fleet includes a range of pumping units and a single water carrier, designed to transport water to areas where it is most needed during critical incidents. Having a full understanding of the areas where hydrant provision is limited, and the impacts would benefit the service.

### CRMP Proposal to adapt to the effects of Climate Change

In anticipation of the increasing impacts of climate change, including more frequent floods, wildfires, and droughts, it is proposed the Service take steps to further minimise these risks. Strengthening its water rescue capabilities across the county, ensuring resources are aligned with local risks and improving response capacity for environmental emergencies. This would involve enhancing water safety equipment and increasing the number of trained personnel to manage water-related incidents more effectively.

To address the growing threat of wildfires, it is proposed to enhance the wildfire capability and response by improving pre-planning, fostering collaboration with partner agencies, and reviewing equipment, PPE, and vehicles.

Understanding water availability and risks in specific areas is crucial, it is proposed the Service develop a comprehensive plan for moving water for firefighting where needed during periods of drought. This will include raising awareness, pre-planning, and coordinating water transport to critical areas in a timely and efficient manner.

These improvements will better position SFRS to manage climate-driven emergencies and protect communities across Shropshire.

### Meeting the challenges of New Energy systems

The Service currently addresses incidents involving new energy systems, such as battery storage units and electric vehicles, by applying large quantities of water over an extended period. This approach is necessary to control intense fires, particularly those caused by battery thermal runaway,

which can be difficult to extinguish. However, the use of sustained water application can lead to significant disruption for both the public and businesses, as it often requires prolonged firefighting efforts.

Given the relatively new nature of these technologies, specialised techniques and equipment are only now emerging in the market. As a result, many fire services, including SFRS, are currently utilising traditional firefighting methods. Many services are now exploring the use of advanced equipment specifically designed for incidents involving new energy systems. The complexity of these incidents highlights the ongoing need for fire services to adapt to the evolving risks associated with modern energy technologies.

### CRMP Proposal to Meet the challenges of New Energy systems

To effectively manage the risks posed by new energy technologies, it is proposed the Service enhance its training, equipment, and expertise in this field. Specialised training for operational crews to address the specific hazards associated with battery storage units, electric vehicles, and solar farms.

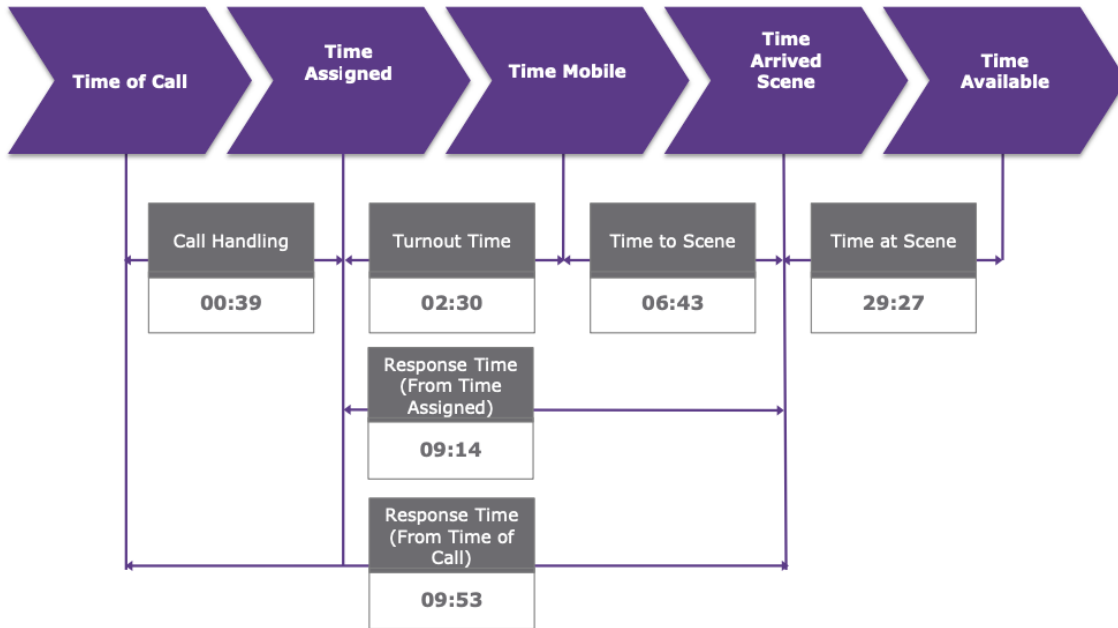
This training will ensure crews are equipped with the knowledge and skills to safely manage incidents involving these technologies. Additionally, upgrading firefighting equipment to include tools designed for these emerging risks to improve safety and efficiency. To significantly reduce the impact of such incidents on the public and businesses

### Fire Service Attendance standard

The Service closely monitors its response times to ensure efficient emergency management. Data from April 2021 to March 2023 reveals the mean first response time is approximately 9 minutes and 14 seconds, from receiving the call to arriving at the scene. This time includes several stages: call handling, turnout time, and travel time.

Call handlers in fire control process emergency calls swiftly and dispatch the nearest resources, while operational crews mobilise and travel to the incident. Response times are influenced by factors such

as time of day, incident location, and traffic conditions. Urban areas typically experience faster response times due to shorter travel distances, while rural areas often see longer response times due to increased travel distances and challenging terrains.



2-Year Sample (Apr 2021 to Mar 2023)



### CRMP Proposal to adapt the Fire Service Attendance standard

It is proposed the Service establish distinct standards for both call handling and mobilisation times to enhance transparency and accountability. This would create a clear benchmark for measuring performance, ensuring that every stage of the response cycle, from “receipt of a call” to “arrival at the scene,” is tracked and optimised.

By setting specific standards for these stages, the Service can better identify areas for improvement, manage public expectations, and ensure that resources are allocated effectively. This proposal would also align with national move to clarify emergency response times and responsibilities, supporting consistent and efficient service delivery.

## Meeting the challenges of climate change and expansion in Shrewsbury

Shrewsbury Fire Station, located on St Michael's Street at the northern edge of the town centre, serves as a hub for emergency response, housing three fire appliances and several specialist vehicles, including the Service's water rescue and flood response units. Access to key areas, such as the county hospital, shopping districts, and recreational zones, depends largely on a single main route through St Michael's Street. During severe weather and flooding, this route can become compromised, leading to delays in emergency response.

As part of the Service's preplanning phase for flooding events, temporary measures are put in place, such as relocating a fire appliance to the West Midlands Ambulance Service (WMAS) site on the western side of town. While this may not always be the most efficient location, it remains a viable option when access routes are compromised. As Shrewsbury continues to grow in size and population, and with the development of the Northern Relief Road, there will be increasing demand for emergency response on the western side of town.

### CRMP Proposal to meet the challenges of climate change and expansion in Shrewsbury

To address the increasing risks posed by flooding and the growing demand in Shrewsbury, it is proposed that the Service explore relocating a fire appliance to West Shrewsbury. This could involve establishing a new station or adapting existing facilities on a temporary basis to mitigate the risk during flooding events.

By positioning resources closer to the expanding areas of West Shrewsbury, the Service can improve response times and better manage flood risks. This proactive approach ensures that SFRS is prepared to meet the evolving needs of the community, supporting both safety and operational efficiency as infrastructure expands.

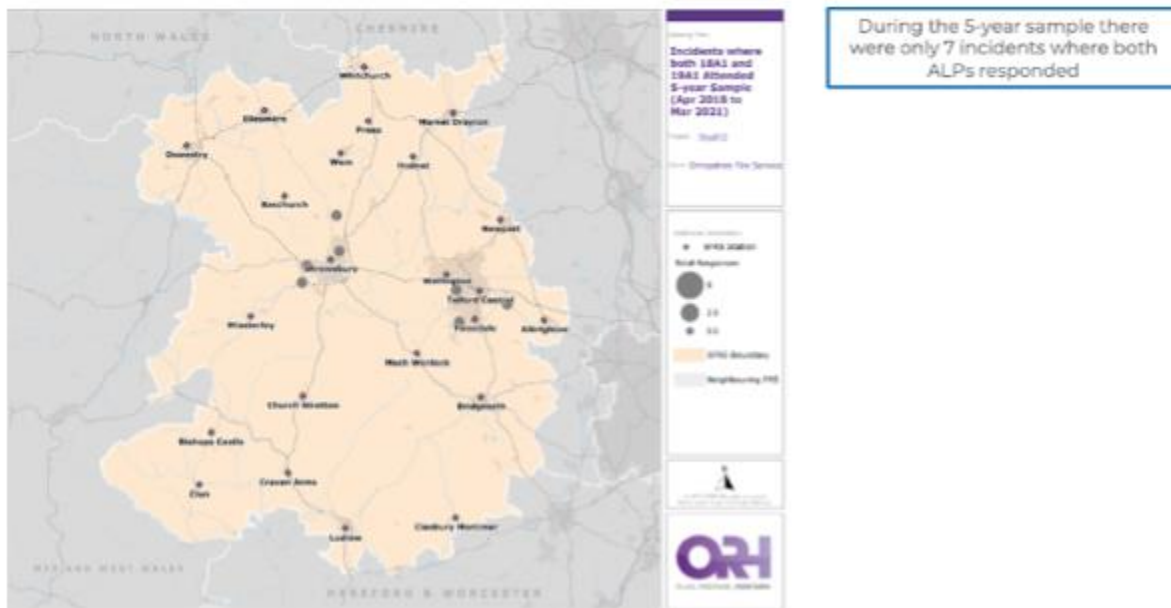


## Strategic Aerial Appliance Capability

The Service currently operates two aerial appliances, based at Shrewsbury and Telford Central. Both appliances are capable of operating up to 32 meters in height and are substantial in size, making them versatile tools for a range of firefighting and rescue operations. While they are equipped with rescue platforms, they are frequently deployed to large-scale fires as water towers and are predominantly used to minimise risk by supporting safe working at height.

Both aerial appliances are nearing the end of their operational life, with a budget allocated for their replacement. Recent refurbishments have extended their operational life into the 2025 CRMP cycle. However, due to their size, there are occasions when access and operating space can be challenging, especially in confined urban areas.

Analysis over the past five years has shown that both aerial appliances were deployed simultaneously on only seven occasions. This data highlights the relatively low frequency of dual deployments and suggests that while having two aerial appliances provides flexibility, there is minimal operational overlap.



## CRMP Proposal Strategic Aerial Appliance Capability

To address the evolving risk profile within Shropshire, particularly for rescues, working at height, and water capability, it is proposed that the Service conduct a comprehensive review of its strategic aerial provision.

This review will assess the current usage and capabilities of the two aerial appliances, ensuring they align with both societal changes and the recommendations from the Grenfell Tower Inquiry. Given the low frequency of simultaneous deployments and the challenges posed by their size, the review will explore options for more flexible, modern solutions that enhance overall response effectiveness, including potential upgrades or changes to appliance types and placement across the county.