



HEREFORD & WORCESTER
HWFR
FIRE AND RESCUE SERVICE

Strategic Understanding of Risk 2023-24

PESTEL



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Introduction

Hereford & Worcester Fire and Rescue Service (HWFRS) is preparing its Community Risk Management Plan (CRMP) for the years 2025 to 2030. The CRMP is designed to enable the Service to assess all foreseeable fire and rescue related risks, while ensuring it continues to fulfil the legislative requirements placed upon it. The objective of the CRMP is to ensure the appropriate allocation of available resources aligned to Response, Protection and Prevention functions, and to utilise these resources in the most efficient manner to mitigate risk and improve community safety.



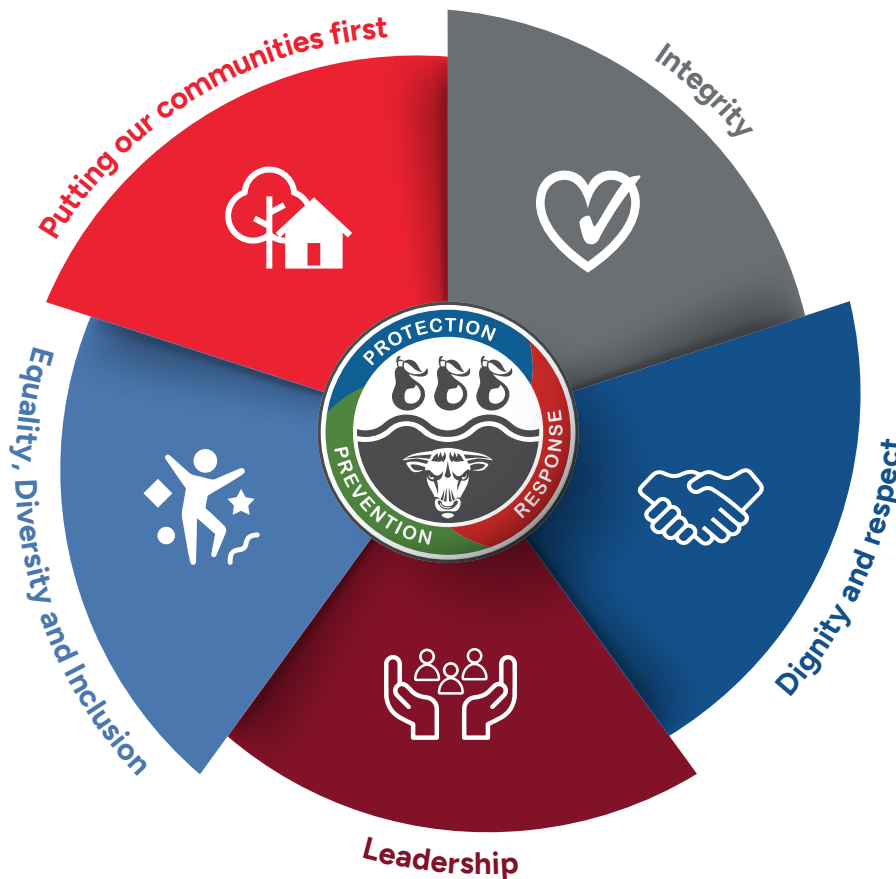
The Fire and Rescue National Framework for England requires every English fire and rescue service to produce a Community Risk Management Plan and the Fire Standards Board published a national fire standard on producing a CRMP in 2021, following six key guidelines:

1. Current risk assessments must be used to identify risks which could affect the fire service
2. We must explain how we will use our resources including Prevention, Protection and Response to reduce risk and respond to emergencies
3. We must outline how we will enforce the law that sets out how businesses and organisations manage fire safety in their buildings
4. The plan must cover at least a three-year span but be reviewed and revised as often as required
5. We must consult effectively with our communities, workforce, their representative bodies and other partners
6. The plan must be easily accessible and publicly available

Our Ethical Principles

We are guided by the [Core Code of Ethics for Fire and Rescue Services \(FRS\)](#) in England.

The Core Code of Ethics sets out five ethical principles, which provide a basis for promoting good behaviour and challenging inappropriate behaviour. These principles are our guiding set of values and help us to improve organisational culture and workforce diversity, ensuring that communities are supported in the best way.



Putting our communities first

We put the interest of the public, the community and service users first.



Integrity

We act with integrity including being open, honest and consistent in everything we do.



Dignity and respect

We make decisions objectively based on evidence, without discrimination or bias.



Leadership

As positive role models, we are accountable for everything we do and challenge all behaviour that falls short of the highest standards.



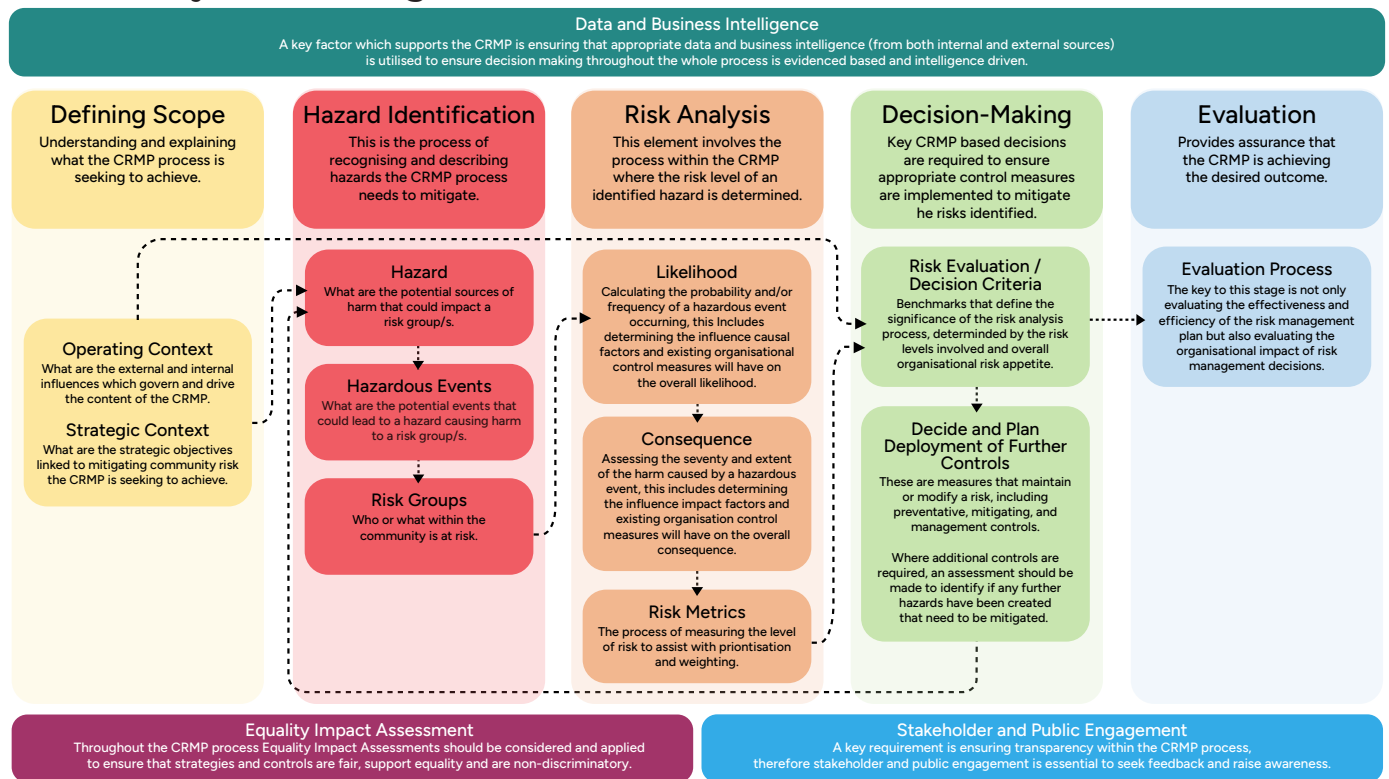
Equality, Diversity and Inclusion

We stand against all forms of discrimination, create equal opportunities, promote equality, foster good relations and celebrate difference.



Introduction continued

Community Risk Strategic Framework



Preparing a CRMP follows a process set out in a CRMP Strategic Framework developed by the National Fire Chiefs Council (NFCC). The process has five essential components:

- Defining Scope – understanding and explaining what the CRMP process is seeking to achieve
- Hazard Identification – recognising and describing the hazards the CRMP process needs to mitigate
- Risk Analysis – determining the risk levels of identified hazards
- Decision-Making – making key decisions to ensure appropriate control measures are implemented to mitigate the risks identified
- Evaluation – providing assurance that the CRMP is achieving the desired outcome

The CRMP is also underpinned by three key themes, which support, influence and inform each component throughout the whole process. The three themes are:

- Data and Business Intelligence – ensuring that appropriate data and business intelligence (from internal and external sources) is utilised to ensure decision-making throughout the whole process is evidence based and intelligence driven
- Equality / People Impact Assessment (EqIA/PIA) – considering and applying equality impact assessments to ensure that strategies and controls are fair, support equality and are non-discriminatory
- Stakeholder and Public Engagement – ensuring transparency through stakeholder and public engagement to seek feedback and raise awareness

Introduction continued

This document brings the first three components of the Framework together in a single document to provide a strategic understanding of risks that affect or may affect the two counties of Herefordshire and Worcestershire and the Fire and Rescue Service over the coming years to 2030. This will assist in determining the significance of the risks when deciding the appropriate measures to address those risks through preventative, mitigating and management controls, balanced against the overall organisational risk appetite.

The Strategic Understanding of Risk document will be reviewed annually to ensure the risks and analysis remain as up to date as possible.

Defining the Scope of the CRMP process

Defining the scope involves developing a detailed profile of the Herefordshire and Worcestershire community and maintaining a thorough understanding of factors that can influence it. Alongside the community profile, it is also important to consider other key external and internal factors that may shape or influence the CRMP process. This will provide the overall context in which HWFRS operates and will help to establish the strategic objectives linked to community risk management.

Identifying the operating context

Many factors influence and shape how HWFRS operates, from government policy and legislative requirements to societal change, community demographics and new and emerging risks such as Covid-19 and the impacts of climate change. To provide a structure for assessing and understanding the factors that may influence the operating context, a PESTELO analysis has been used. PESTELO is an acronym that stands for Political, Economic, Social, Technological, Environmental, Legal and Organisational. The PESTEL part of the analysis considers the range of external issues that may influence HWFRS, while the Organisational part looks at the internal strengths and weaknesses of the Service and its capabilities to respond to potential opportunities and threats presented by the external environment. This research can be found in our Definitions of Risk and Demand documents. The analysis is supplemented by views from stakeholders, HWFRS staff and the public of Herefordshire and Worcestershire, which helps to consolidate our understanding of the local context as well as maintaining transparency in the CRMP process.

Understanding the external landscape – PESTEL analysis

The new CRMP will cover the period up to 2030, so it is important to scan the horizon to explore what factors affect how HWFRS operates now and to consider how they might change and influence the Service in the future.

Political

The political environment in which HWFRS operates is framed by national and local government policy. Nationally, the government sets the overall policy framework for fire and rescue services and takes the key decisions in relation to priorities, resources, funding levels and legislation. At the local level, Herefordshire and Worcestershire local authorities¹ provide governance oversight for HWFRS, with the Fire and Rescue Authority (FRA) responsible for ensuring the Service carries out its statutory duties, including setting the budget, approving the overall Service direction and appointing the Chief Fire Officer.

National government requirements and changes

Within Government, responsibility for fire prevention and rescue sits with the Home Office. Their priorities include protecting vulnerable people and communities, managing civil emergencies and reducing terrorism. At the Home Office, the Minister of State for Crime, Policing and Fire also has responsibilities for fire policy, implementing recommendations following the inquiry into the Grenfell Tower fire, and the delivery of the Emergency Services Network (ESN) through the Emergency Services Mobile Communications Programme (ESMCP).

A general election in the UK was held on July 4, 2024. This has resulted in a change of government for the first time in 14 years and a strong majority for the Labour Party. While overall priorities for fire and rescue seem unlikely to change under the new Government, any shifts in policies relating to emergency services or realignment of budget allocations may require adjustments within the fire and rescue sector. For example, the increasing pressures on public spending in

areas such as health, education, social care and welfare services may result in reduced funding for fire and rescue. This could lead to operational and organisational challenges for fire and rescue services in areas such as equipment procurement and maintenance, workforce recruitment and retention, and training provision.

HWFRS will need to continue to monitor budget provision in the light of any change of government direction to maintain a focus on balancing resources and prioritising key areas of community risk.

Impact of inquiries

Following the Phase 1 report of the Grenfell Tower Inquiry a number of [key findings and recommendations](#) were outlined, each of which have implications for fire and rescue services. Among these are a requirement for owners and managers of high-rise residential buildings to provide their local fire and rescue service with information on building design and materials; a requirement for national guidelines for the evacuation of high-rise towers; improvements in response, training and communication within fire and rescue services; and strengthening cooperation and coordination between police, fire and ambulance services. A subsequent independent review into building regulations and fire safety resulted in the Fire Safety Act 2021, aimed at making homes safer. The Act clarified the scope of the Fire Safety Order in respect of multi-occupied residential buildings, and the Fire Safety (England) Regulations 2022 implemented the majority of the recommendations in the Phase 1 report, effectively imposing new duties on building owners and managers responsible for fire safety.

¹ Hereford & Worcester Fire and Rescue Service is governed by what is known as a 'Combined Fire and Rescue Authority' where local councillors from both Herefordshire and Worcestershire are appointed as members of the Fire and Rescue Authority to oversee the work of the Service. Hereford & Worcester Fire and Rescue Authority (HWFRA) is currently made up of 25 local councillors, 6 from Herefordshire Council and 19 from Worcestershire County Council.

Political continued

Alongside the Fire Safety Act is the Building Safety Act 2022, which overhauls existing regulations to make clear how residential building should be constructed, maintained and made safe. As part of this, a Building Safety Regulator has been appointed within the Health and Safety Executive to oversee the safety and standards of all buildings. Fire and rescue services will be expected to support the Regulator in areas such as technical fire safety advice, firefighting operations and approaches to enforcement.

Changes in building safety regulation will impact on of Business Fire Safety provision at HWFRS. This would include additional responsibilities in terms of providing more advice, inspections and enforcement activities and maintaining databases of high-risk properties. There may also be additional training requirements for response to high rise incidents. It may also provide potential challenges to recruitment and retention of highly specialist protection staff.

Fire Sector Reform

In May 2022, the Home Secretary unveiled ambitious plans for fire reform. The [Fire Reform White Paper](#) consultation document highlighted three broad areas where reform is needed to ensure fire and rescue services are supported in their role, protecting and serving communities:

- People: clarifying the role of the firefighter and building a culture that welcomes all members of the community,
- Professionalism: providing greater development and leadership opportunities for all fire service staff, and potentially establishing a college of fire and rescue,

- Governance: proposals to transfer fire governance to a single elected individual and exploring the potential in providing operational independence to chief fire officers.

The White Paper echoes a need for fire sector reform called for in [annual State of Fire and Rescue reports](#) published by the Chief Inspector for His Majesty's Inspectorate of Constabulary and Fire & Rescue Services (HMICFRS), which include recommendations on the role of fire and rescue services, the definition of risk, reforming pay and conditions mechanisms, and proposing operational independence for chief fire officers.

HWFRS provided a written response to the consultation and this formed part of the State of Fire and Rescue: The Annual Assessment of Fire and Rescue Services in England 2023, which was published on May 9, 2024 and reflects progress made since inspections began in 2018, highlights improvements and identifies areas where more work is needed.

Local governance

Hereford & Worcester Fire and Rescue Authority (HWFRA) has provided governance oversight for HWFRS since 1974. It is legally required to ensure that the Service is able to carry out its duties in relation to fire prevention, fire safety, firefighting and rescues, including from road traffic collisions and other emergencies such as flooding. Using funds collected from Council Tax, business rates and grants from Government, the Authority sets a budget and approves the overall direction of the Service. It also appoints and holds to account the Chief Fire Officer/Chief Executive (CFO), ensuring the Service has the right people, equipment and training to carry out duties effectively and in the best interests of the public and community it serves.

Political continued

The [Policing and Crime Act 2017](#) includes provisions to enable Police and Crime Commissioners (PCCs) to take on the governance of fire and rescue services, where appropriate. In 2019, the Home Secretary approved the West Mercia PCC's business case to take over the roles of both Hereford & Worcester Fire and Rescue Authority and Shropshire & Wrekin Fire and Rescue Authority. However, following objections by both Authorities and a subsequent judicial review into that decision, no further action has yet been taken. As such, future governance arrangements remain unresolved.

Global Conflict and Civil unrest

Against the backdrop of the wider political environment, with global issues like the wars in Ukraine and Gaza and their impact on energy costs and supply chain disruption, worker shortages post-Brexit; the cost of living crisis with rising costs and high inflation affecting living standards; the ongoing impact on communities of the Covid-19 pandemic; and growing dissatisfaction with pay and conditions leading to industrial action and strikes, particularly among public sector workers, there is a concern that the combination of such factors may lead to an increasing potential for wider public disorder and disruption across the country. The government's assessment of serious risks is set out in the [National Risk Register](#), which recognises the highly unpredictable nature of public disorder. It considers that the potential for large-scale disorder impacting on emergency services and government is relatively low, though localised disorder may stretch police resources.

Immigration and asylum for those seeking to come to the UK is another political issue that has given rise in some areas to resentment and anti-refugee sentiment, in some cases leading to violent attacks on asylum seekers and immigration centres.

HWFRS is a member of the West Mercia Local Resilience Forum (LRF), which brings local responders together to ensure preparedness and response capabilities having assessed the highest priority risks in the local area. This includes the preparation of a [Community Risk Register](#), which highlights social disruption as a potential risk. The LRF will also need to be aware of potential for protest and unrest at accommodation centres and hotels used for migrants/asylum seekers in Herefordshire and Worcestershire following unrest elsewhere in the country.

Political continued

Terrorism

The threat level for the UK from international terrorism is set by the [Joint Terrorism Analysis Centre](#), based at MI5 headquarters in London. At July 2024, the national threat level remains at Substantial, meaning that an attack is likely. The National Risk Register considers that terrorist attacks in venues and public spaces are highly likely, potentially using explosive devices such as at the 2017 Manchester Arena attack or through marauding terrorist attacks (MTA) (i.e. deliberately seeking targets using a wide range of methodologies such as vehicles, bladed weapons and firearms) such as the 2017 London Bridge attack. Potential impacts are multiple fatalities and casualties, damage to property and infrastructure and economic damage. Such attacks also put pressure on emergency services.

The use of Joint Emergency Services Interoperability Principles (JESIP) provides the basis for a coherent multi-agency response, including the use of fire and rescue specialist responders through Urban Search and Rescue teams, MTA teams and hazardous materials teams.

HWFRS maintain a cadre of National Inter-Agency Liaison Officers (NILOs). This is a specialist role that has received specific training and ongoing Continuing Professional Development to support the resolution of terrorist related incidents. They are linked in to both the regional and national NILO networks, which work together to share information and intelligence, organise and facilitate training and exercises and work with partners across the other blue-light agencies and the Ministry of Defence.

There is concern that the Israel/Gaza conflict could result in self-initiated terrorism (SIT) where individuals self-radicalise through propaganda being distributed by terrorist organisations and those affiliated with them. The NILO cadre receives updates on the risk this poses and any specific developments that have come out of the conflict. However, a change in the National Threat Level would occur if intelligence identified a significant threat. In addition, there seems to have been an increase in hate crimes and a rise in extremist counter-protests to the pro-Palestine protests that have taken place. This has the potential to lead to public order issues but provides opportunity for those affiliated with proscribed organisations to commit or incite violent acts.

Economic

The financial environment in which HWFRS operates is largely determined by the health of the national and local economy. It plays a significant role in determining the share of public spending and tax receipts available to fire and rescue services, and subsequently impacts on the deployment of resources across prevention, protection and response activities. Global and international crises such as the Covid-19 pandemic and the Ukraine-Russia war play a part, as do national issues such as inflation, unemployment and Brexit-related challenges.

Challenges to the health of the economy

Many factors impact on the health of the UK economy including the gross domestic product (GDP), the rate of inflation and interest rates. The GDP is the total value of goods and services produced and is an indicator of economic growth and output. According to the [Office for National Statistics](#) (ONS), the UK GDP grew by 0.3% overall between January and March 2024. This is 0.3% above the same period in 2020, before the arrival of the pandemic. It is estimated to be 1.7% above pre-pandemic levels. However, it continues a trend of slow growth as the UK recovers from the pandemic. The rate of inflation is an indicator of economic stability and purchasing power and can be measured in various ways, but the headline measure is the Consumer Prices Index. Using an imaginary [basket of goods and services](#) reflecting shopping trends, the UK inflation rate was 2.8% in May 2024, edging slowly towards the Bank of England (BoE) target of 2.0%. The BoE adjusts interest rates as a way of tackling inflation. In July 2024, the bank [interest rate](#) stood at 5.25%, the highest for 15 years, which affects the cost of borrowing on loans and mortgages, but also leads to higher savings rates.

Alongside the challenges of slow economic growth and continuing high inflation, there are other pressures including higher energy prices, supply chain disruptions, and costs associated with an increase in economic inactivity (i.e. people who are not working or looking for work) and health inequalities. According to [Public Health England](#), prior to Covid-19, health inequalities in England were estimated to cost the NHS an extra £4.8 billion a year, cost the UK between £31-£33 billion a year in lost productivity and between £20-£32 billion a year in lost tax revenue and higher benefits payments.

Public spending

In the financial year 2023-24, the UK government had a budget deficit of £121 billion, which means it was spending more than it received in taxes and other revenues and had to borrow to make up the difference. The [Office for Budget Responsibility](#) had expected the deficit to fall from the previous year's figure of £137 billion with more income from taxes. Public sector spending in the 2023-24 financial year was £1,189 billion, spent in areas such as public services, state pensions and debt interest. Public spending is expected to grow at a slower rate than the economy, as temporary energy and cost-of-living support recedes and as government departmental spending reduces relative to the size of the economy. Reductions in departmental budgets may put pressure on grant funding available to fire and rescue services.

In 2023-24, fire and rescue authorities in England received approximately £2.5 billion in [funding](#).

Fire and Rescue Authorities in England are funded from a combination of direct government grants, local council tax and a small share (1%) of the locally collected business rate. The proportions of these elements vary across the country.

Economic continued

In 2024/25 total funding available to HWFA was £43.328m: 29% from government grants, 6% from business rates and 65% from council tax, of this total 5% is temporary grant funding not technically in the base provision. In addition to this funding the Authority will be using £0.260m of reserves.

Ordinarily the government would provide a medium-term grant plan for local government, but although there was three-year Comprehensive Spending Review (CSR), for the three years up to 2024/25, there has been no corresponding grant plan and 2024/25 is the sixth successive year of single year grant settlements. This makes future planning somewhat difficult.

In addition, and prior to the recent General Election there were commitments to reset the Business Rate system, to implement the Fair Funding Review for Local Government, to review the fire funding formula and to review Business rates as a tax.

The view of the new government on these issues is not yet known and speculation at this stage would be un-informed and unhelpful.

What is not in question, is that there will be continued budgetary pressure from inflation and international economic influences and the Authority will continue to seek efficiencies wherever possible. Over the three years of the current CSR, to 2024/25, the Authority will have achieved annual efficiencies of 2% of non-pay budgets and intends to continue with this target into the future.

The high rate of inflation and similarly high interest rates have had a significant impact on HWFRS. Inflation has affected building projects such as fire station replacements because essential construction materials have experienced dramatic price increases due to supply chain disruptions and geopolitical risks; rising wage costs and labour shortages have affected the construction industry as wages can account for more than half of overall construction costs; rising fuel prices have also had an impact on budgets with construction equipment running on fuel while getting materials to site has also become more expensive.

High fuel costs and spiralling energy prices have also had an effect on budgets while costs of new vehicles and kit have also increased.

Energy costs

While the UK does not have significant direct trade links with either Russia or Ukraine, the [UK economy](#) is mostly exposed as a result of the impact the war is having on global energy prices. Rises in the price of oil and gas have led to increases in petrol and diesel, household gas, electricity and food bills. In the short term, fears of future fuel shortages appear to be lessening as [measures](#) are proposed to strengthen the UK fuel supply chain. There is also less likelihood of power outages or blackouts in the short term as there are now higher gas storage levels in Europe and more nuclear power available for import. However, there continues to be concern about the ongoing impact on fuel poor households in terms of energy bill affordability and how these households are using energy especially over winter months.

Economic continued

Research from the [Committee on Fuel Poverty](#) published in May 2023, reported on the challenges facing fuel poor households, how some groups are more affected and how coping strategies over winter has led to more unconventional and more dangerous heating and lighting methods to avoid using energy. It highlighted a number of groups most vulnerable including low-income households, those with health-based vulnerabilities, ethnic minority households, single parent households and those in the private rental sector. A particular area of concern for fire and rescue services was an increasing use of fire – such as candles, tea-lights and burning unsuitable materials, including furniture, in open fireplaces – as sources of heat and light. There are also concerns of households storing canisters of gas (hoping to head off gas price increases) and reports of households trying to bypass their electricity and gas meters, which could lead to gas leakage in the home.

There are three important factors in determining whether a household is fuel poor: household income, household energy requirements and fuel prices. Using an indicator called Low Income Low Energy Efficiency (LILEE)², a household is considered to be fuel poor if:

- they are living in a property with a fuel poverty energy efficiency rating of band D or below, and
- when they spend the required amount to heat their home, they are left with a residual income below the official poverty line.

Other factors identified from national research³ suggest that fuel poor households tend to live in large, older houses mostly as owner-occupiers and families. Rurality is also seen as a factor where there are higher proportions of households not on a mains gas supply compared to nationally.

Using the government's LILEE (Low Income Low Energy Efficiency) indicator, in 2023, the West Midlands region had the highest rate of fuel poverty in England (19.5% of households compared with 13.0% for England). This included 14.4% of households in Worcestershire and 28%, or around 23,876 households, in Herefordshire. These figures largely show a worsening situation from 2021 when the West Midlands region had a fuel poverty rate of 18.5% of households compared with 13.1% for England. At that time, 19.2% (or 16,300) of households in Herefordshire⁴ were in fuel poverty. In 2021, the LILEE indicator for Worcestershire in 2021 was 15.9% meaning around 13,600 households were in fuel poverty.

These latest figures reflect the surge in energy prices following the Russian invasion of Ukraine.

² [Department for Business, Energy & Industrial Strategy, 2023](#)

³ [Cutting the cost of keeping warm: a fuel poverty strategy for England, HM Government, 2015](#)

⁴ [Understanding Herefordshire: fuel poverty, Herefordshire Council, 2023](#)

Economic continued

Cost of living

The cost of living has been rising in the UK and across the world. Food and energy prices have risen markedly since 2022, particularly gas prices. Figures from the [Office for National Statistics](#) in June 2024 reflect that 87% of adults were concerned at the cost of living with four in 10 adults finding it difficult to afford their rent or mortgage payments and 98% of adults stating that their cost of living had either remained the same (47%) or increased (51%) within the previous month. A February 2024 ONS report on the [impact of increased cost of living on adults](#) also showed that pressures from high food prices remain. Although food inflation was now 7%, the lowest level since April 2022, four in 10 people said that they had bought less food in the previous two weeks and around 1 in 25 adults reported they or their household had run out of food and not been able to afford more in the two-week survey period. Particular groups affected were renters, low paid households, disabled adults, those receiving support from charities, those receiving benefits or other financial support and Black, African, Caribbean or Black British adults or Mixed or Multiple ethnic group adults. There was also evidence that high food prices may also impact people's ability to afford healthy choices.

[Earnings figures](#) from the Office for National Statistics continue to show that annual pay growth rates for the public sector remain below those of the private sector. There is a concern that, as a public sector service, HWFRS may not be able to recruit and, importantly, retain staff as private sector salaries become more competitive and attractive (which is likely to affect On-Call staff more than Wholetime).

Recovery from Covid-19 pandemic

While the World Health Organisation (WHO) has said that Covid-19 no longer represents a global health emergency, it has not gone away. The virus is still evolving and new variants are emerging, though the potential impact on health is still being debated. According to the official [UK government coronavirus website](#), the number of people testing positive in England in the 7 days to 29 May 2024 was 1,653. Over the same 7-day period, 1,567 patients were admitted to hospital. There continues to be a greater risk to elderly people and those with health conditions.

HM Treasury has been tracking the cost of the measures the government has taken in response to Covid-19. The amount spent so far is £358 billion (at July 2023) and a total of £373 billion is expected once all measures are complete.

Social

To understand where risk exists with the communities across Herefordshire and Worcestershire, it is vital that HWFRS has an in-depth knowledge of the community it serves. Developing a community profile involves considering a range of social factors to help to identify community vulnerabilities and risks, including potential hazards and the risk groups that may be impacted by them. Consideration of three main social factors help to form a good picture of the local community: socio-demographics, socio-economic status, and crime trends.

- Socio-demographics covers a wide range of factors, including age, sex, gender, ethnicity, employment status, home ownership, population distribution and density, and household composition. It also covers health related issues and trends such as smoking habits, alcohol consumption, drug use, mental or physical impairment, frailty, mobility, oxygen usage and use of assistive technology.
- Socio-economic status relates to a person's or a group's social standing or how well they can support themselves. Key factors include levels of educational attainment, occupation, employment status and income. Issues arising are often related to relative levels of deprivation and poverty.
- Crime trends help to give a picture of how safe people feel in their area.

Together, these factors provide useful information about the population and how it changes, how people live, their health, how they spend their money and how crime affects their communities.

Population growth and change

The counties of Herefordshire and Worcestershire cover a very large, mostly rural area of around 1,500 square miles. They had a combined population recorded of 790,700 in the 2021 Census (Herefordshire = 187,000 residents, Worcestershire = 603,700). The population is projected to increase by 5.6%, or 44,000 additional people, by 2031. It is expected that 81% of this total increase will be people aged 65 years and over. This will add to an already high proportion of older residents across the two counties.

Around a quarter (26%) of the total resident population of Herefordshire is aged 65 or over, compared with 19% for England and Wales. The number of older people is projected to grow at a higher rate than younger age groups. There is also a higher proportion of adults in the older working age group (mid-40s to 64 years old) than younger working age adults (age 16 to the mid-40-year-olds). At the same time, there is a lower proportion of children in Herefordshire compared with nationally (16% against 19%), and numbers have fallen.

The 2021 Census for Worcestershire recorded around 138,000 persons aged 65 or over (about 23%). Proportions in the local authority districts ranged from particularly high levels of people aged 65-plus in Malvern Hills district (28%) to less than 18% in Worcester. As with Herefordshire, the number of people aged 65-plus is expected to grow at a higher rate than younger age groups.

Social continued

Population growth across the two counties and the increasing proportion of older people in the coming years are important factors for HWFRS in resource allocation and planning. While age is a factor in relation to fire risks, it is also a contributory factor to many health-related risks. For example, it needs to be considered alongside issues such as poor mobility, frailty, poor mental health and other cognitive impairments. There are also other behavioural characteristics, which are not necessarily age-related, such as smoking, drug and alcohol use, which also increase an individual's risk.

HWFRS prevention work is already targeted towards supporting vulnerable groups, and it will be important to maintain a focus on the ageing population, especially in rural areas, who may present greater fire risks because of their age and other contributory factors.

Housing

The 2021 Census recorded some 342,700 households across the two counties (82,800 in Herefordshire and 259,900 in Worcestershire).

Herefordshire covers a large area of 842 square miles and is predominantly rural. Some 95% of the county is classified as rural. It has the fourth lowest population density of all counties in England, with just 86 people per square kilometre. Over half of its 187,000 residents live in rural areas, with most living in small towns and villages. Some 58,300 people live in Hereford city while the three largest market towns of Leominster (11,900 people), Ross (11,000) and Ledbury (9,400) make up about a fifth of the total.

Hereford city has a younger profile than the county as whole, with a greater proportion of young adults and young children, while the most rural areas have relatively more 50–70-year-olds. Herefordshire also has a higher proportion of lone pensioner households (16% of the total) compared to the West Midlands and England and Wales (both with 12%).

Worcestershire covers a largely rural area of 672 square miles. Some 85% of the county is classified as rural, though almost three-quarters of its residents live in urban areas. Around 103,900 people live in the city of Worcester, the largest urban area in the two counties. Together with the four larger towns of Redditch (87,000 people), Kidderminster (57,400 people), Bromsgrove (34,750 people) and Great Malvern (30,460 people), the five areas account for over half of the total population.

Houses in both counties are less affordable than nationally, with Herefordshire having the sixth worst affordability in the West Midlands region's 30 local authority areas (all tiers) and the worst of comparable upper-tier local authority areas (unitaries, counties and metropolitan boroughs) in 2023. During 2020, around 1,100 households in Herefordshire were recorded as eligible for prevention from homelessness or homeless relief. In Worcestershire, the affordability ratio (measuring house price to income) is particularly high in Wychavon, Malvern Hills and Bromsgrove districts.

Social continued

New housing development

Housing development can also have an influence on population growth. While development plans across the two counties span different time periods, they suggest a considerable increase in new housing over the next fifteen years, with some 35,000 new homes planned by 2041. The plans and main development locations are noted below.

[Herefordshire Local Plan 2021-2041 \(Draft Local Plan \(Regulation 18\) Strategic Policies, March 2024\)](#) – plans for 9,600 new homes between 2021 and 2041, including:

- 4,500 new homes in Hereford
- 1,000 new homes in Ross-on-Wye

[South Worcestershire Development Plan Review, November 2022](#) – plans for over 28,000 new homes across Worcester, Malvern Hills and Wychavon council areas by 2041. Over 15,000 new homes are already built or planned and a further 13,000 new homes are planned up to 2041. This includes:

- 5,000 new homes at Worcestershire Parkway
- 2,000 new homes at Throckmorton Airfield
- 1,000 new homes at Rushwick (including a new railway station)
- 1,000 new homes near Mitton (including a new school)

[Wyre Forest District Local Plan \(2016-2036\), April 2022](#) – plans for over 5,500 new homes by 2036, including:

- 1,230 new homes at Kidderminster Town
- 1,400 new homes at Lea Castle Village
- 1,440 new homes at Kidderminster Eastern Urban Extension
- 1,150 new homes at Stourport-on-Severn

[Borough of Redditch Local Plan No. 4, January 2017](#) and [Bromsgrove District Plan 2011-2030, January 2017](#) – plans for 7,000 new homes between 2011 and 2030, including:

- 2,800 new homes at Foxlydiate
- 1,000 new homes at Brockhill East on the northwest boundary of Redditch
- 2,000 new homes at several Bromsgrove Town Expansion Sites

Alongside the housing development, there will be an associated increase in local infrastructure, roads and employment sites. With more people, more buildings and more miles of roads, there are likely to be more risks requiring HWFRS intervention through its range of prevention, protection and operational response activity. HWFRS will continue to work with local authority partners to ensure the potential implications for the Service are understood and addressed as far as possible in the plans.

Social continued

Housing conditions

Of 83,765 dwellings recorded in a [BRE study for Herefordshire Council in 2019](#), 68% were owner occupied, 18% were private rented and 14% were social rented. The majority (40%) of dwellings in Herefordshire are detached, a higher proportion than the national average (25%). In addition, many of the dwellings across the county were built before 1919 (28% compared to 11% for England). In terms of hazards to health and safety within the housing stock, the study found that over 19,000 dwellings in the private sector had 'category 1' hazards such as excess cold and fall hazards within the home. Private housing was significantly worse than England for excess cold (19% compared to 4%). Rural households, particularly those in large, older homes, were more at risk of a combination of excess cold and low income. In addition, there were an estimated 1,590 houses in multiple occupation. Herefordshire Council maintains a [public register](#) of properties licensed for use as multiple occupation houses.

The [Herefordshire Joint Strategic Needs Assessment 2021](#) reported that there were lower proportions of houses connected to mains gas than nationally (69% of houses in Herefordshire compared to 87% nationally), which has implications for heating costs. The [Worcestershire Joint Strategic Needs Assessment 2023](#) reported that over 3,100 households had no central heating and just over 5,400 households are overcrowded. It also noted that some 39,400 households in Worcestershire live in socially rented properties.

There is an inextricable link between housing and health. Population numbers are growing and there is a significant increase expected in the number of people over the age of 65, those living alone and those requiring changes in housing due to their health needs. The number and type of housing available will need to reflect this to ensure that affordable, high quality, warm homes can make a substantial contribution to improved health outcomes.

Deprivation and poverty

Overall, Herefordshire and Worcestershire are good places to live, with relatively low levels of poverty and deprivation. However, there are some areas of persistent deprivation in urban areas and in hidden pockets across the wider area. In Herefordshire, the highest levels of deprivation are in parts of Hereford, Leominster and Ross-on-Wye, while in Worcestershire the highest levels are within some urban areas of Worcester, Redditch and Kidderminster.

Deprivation in the UK can be described as a consequence of a lack of income and other resources, which cumulatively can be seen as living in poverty. The government has identified several indicators of deprivation, including income deprivation, employment deprivation, education, skills and training deprivation, health deprivation and disability, crime, barriers to housing and services, and living environment deprivation. To measure relative deprivation from area to area, England was split into 32,844 Lower Layer Super Output Areas (LSOAs). LSOAs are fixed statistical geographies of about 1,500 people or 650 households, designed by the Office for National Statistics. The latest release of the full [English Indices of Deprivation](#) was in 2019.

Social continued

Analysis of the data shows that 11 Herefordshire LSOAs were amongst the 25% most deprived nationally, while one LSOA – the Golden Post-Newton Farm area in Hereford – was in the 10% most deprived nationally. The analysis also shows that 18 Worcestershire LSOAs were in the 10% most deprived nationally, with a total of 55 LSOAs among the 25% most deprived nationally. Location maps are included at the end of this section.

The [Census 2021](#) provided estimates that classify households in England and Wales by four dimensions of deprivation: employment, education, health and disability, and household overcrowding. It estimated that almost a half of households in Worcestershire and 35% of households in Herefordshire are classified as deprived in at least one dimension, though this is lower than the national average of 51.6%. Over 16% of households in Worcestershire and 13% of households in Herefordshire were estimated as deprived in at least two dimensions.

The cost-of-living rates are increasing across the two counties, particularly in Herefordshire. Some 14,145 (17%) households in Herefordshire and 37,469 (15%) households in Worcestershire are fuel poor, but this is set to worsen. Across England as a whole, 13% of households are fuel poor. In Herefordshire, some 6,700 people aged 60 and above live in income deprived households and there are 7,100 workless households. According to a [study by HMRC and the DWP](#), in 2022-23, there were 5,900 children in Herefordshire living in relative poverty, of whom 4,500 were in absolute poverty. In Worcestershire, 18% of children aged under 16 were living in relative low-income families, with 14% living in absolute low-income families.

Analysis of incident data over the last 10 years shows a considerable link between accidental dwelling fires and deprived areas. The more deprived areas have a disproportionate number of accidental dwelling fires than those that are less deprived. HWFRS Prevention activity will need to continue to be targeted at households in the more deprived areas of the two counties.

Health and wellbeing

Deprivation and poverty are important factors in terms of health and wellbeing. People are living longer, but not necessarily in good health. Health inequalities persist in the more deprived areas of the two counties and among the more disadvantaged groups. This leads to decreased life expectancy and higher mortality rates. According to the [Herefordshire Joint Strategic Needs Assessment 2021](#), males born in the 10% most deprived areas can expect to live 6.3 years less than those in the least deprived; for females it was 4.0 years less. Differences in health outcomes also exist for different parts of the population, with poorer outcomes such as premature mortality for example being experienced by people with a learning disability, autistic people and those living with severe mental illness.

Factors driving inequality include higher rates of smoking in more deprived groups, higher rates of excess weight and alcohol specific conditions, decreased physical activity and pressures of fuel poverty. While there has been a reduction in the number of people who smoke, it is still a significant cause of disease. There are still around 20,000 smokers in Herefordshire. In Worcestershire, it was [estimated](#) that in 2017 over 68,500 people smoked. While the number of smokers in

Social continued

Worcestershire has dropped, it is estimated that the number of people with Chronic Obstructive Pulmonary Disease, which mainly affects middle aged and older adults who smoke, could increase from 11,800 in 2021 to between 13,400 and 14,000 by 2030.

The Covid-19 pandemic challenged mental health and wellbeing for residents across both counties and the UK as a whole. While more recent data has shown an improvement, there is a concern that cost-of-living pressures are continuing to have an impact on mental health and wellbeing. In Herefordshire, 28% of adults rate their anxiety levels as 6-10 (where 10 in completely anxious). The Herefordshire Joint Strategic Needs Assessment 2021 also found that 65% of those affected by flooding in 2019-20 said it had affected their mental health, and 85% were worried about being flooded again the future.

Loneliness and isolation are increasingly affecting younger people, particularly among disadvantaged groups. The Herefordshire Joint Strategic Needs Assessment 2021 found that the highest levels of loneliness are among people living in the most deprived areas, housing association renters, non-White British residents, and those in poor current health.

There is a complex relationship of social factors, with health and wellbeing linked to lifestyle and behaviour alongside an ageing population, poverty, deprivation and housing conditions. The combination of such factors can potentially heighten the risk of individuals being more susceptible to requiring assistance from the emergency services, including fire and rescue services.

Crime

[Herefordshire](#) and [Worcestershire](#) are among the safest counties in England. Nevertheless, for the year ending December 2023, the local [Community Safety Partnership areas](#) recorded 54,427 crimes (excluding fraud). The figures include 51 deaths or serious injury caused by illegal driving, 3,183 vehicle offences, and 4,977 cases of criminal damage and arson.

HWFRS continues to work closely with West Mercia Police and other partners to improve road safety, increase safety awareness among young prospective drivers and to help divert young people away from fire-setting behaviours.

Sources:

Information and analysis in this section is primarily drawn from:

[Understanding Herefordshire](#)

[Herefordshire Joint Strategic Needs Assessment 2021](#)

[Worcestershire Joint Strategic Needs Assessment 2023](#)

[Herefordshire and Worcestershire Integrated Care Strategy 2023 – 2033](#)

Indices of Deprivation 2019 – Herefordshire and Worcestershire locations

The Indices of Deprivation 2019: [Findings for Herefordshire](#) report in February 2020 highlighted that the most deprived areas of Herefordshire are located in the south of Hereford city and in Leominster, Ross-on-Wye and Bromyard. Golden Post – Newton Farm in Hereford is the most deprived area of the county, being the only LSOA to be in the 10% most deprived nationally.

Social continued

The 11 Herefordshire LSOAs amongst the 25% most deprived nationally are:

- Golden Post – Newton Farm in Hereford – in the 10% most deprived nationally (2,871st most deprived nationally)
- Leominster Grange in Leominster – in the 20% most deprived nationally
- Redhill-Belmont Road in Hereford – in the 20% most deprived nationally
- Leominster – Ridgemoor in Leominster – in the 20% most deprived nationally
- Hunderton in Hereford – in the 20% most deprived nationally
- Newton Farm – Brampton Road in Hereford – in the 20% most deprived nationally
- Leominster – Gateway in Leominster – in the 20% most deprived nationally
- Hunderton – Bishop’s Meadow in Hereford – in the 20% most deprived nationally
- Ross – John Kyrle in Ross-on-Wye – in the 20% most deprived nationally
- Bromyard Central in Bromyard – in the 25% most deprived nationally
- Hereford City centre in Hereford – in the 25% most deprived nationally

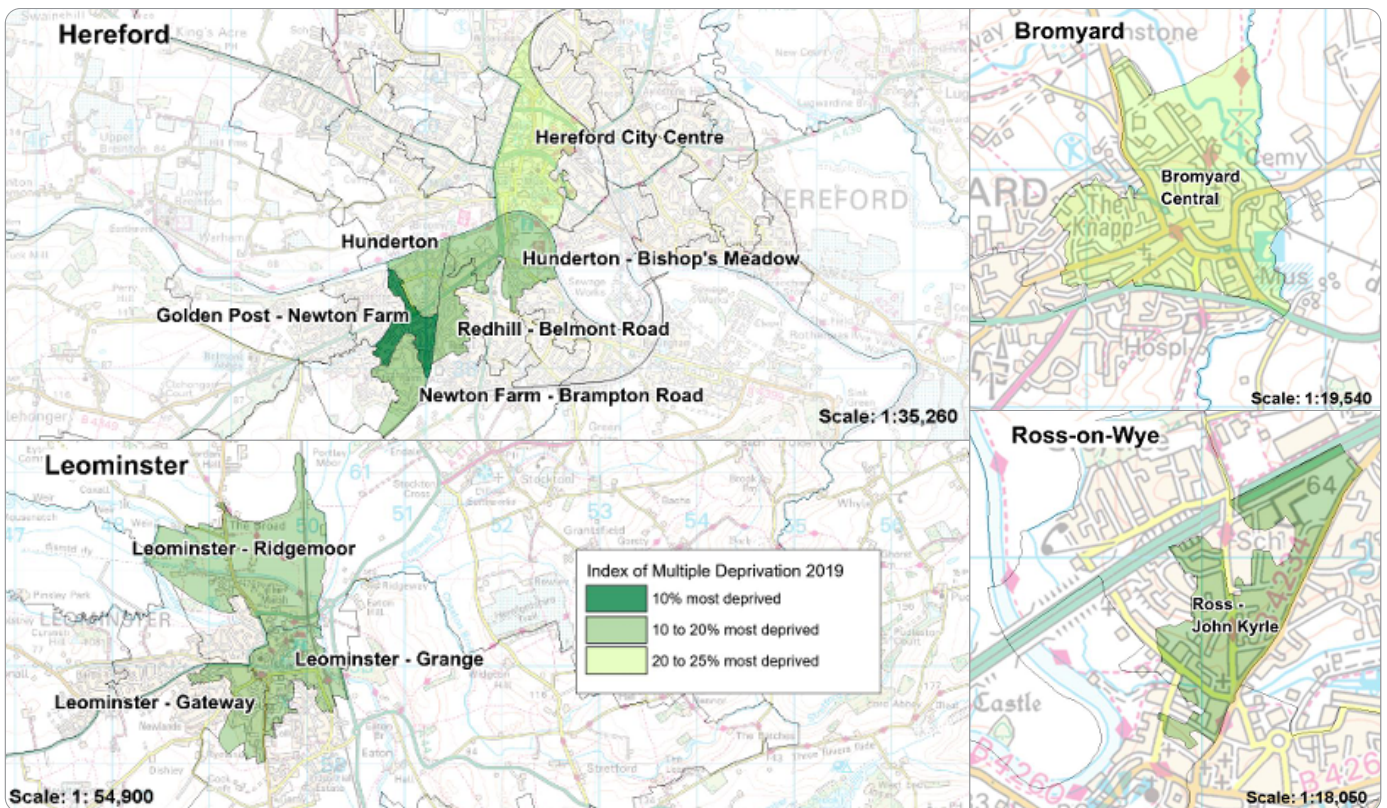


Figure 1. Maps showing the areas of Herefordshire that are amongst the most deprived nationally according to the IMD2019 – Herefordshire Council Intelligence Unit

Social continued

The Indices of Deprivation 2019 showed that 18 Worcestershire LSOAs are amongst the 10% most deprived nationally. Eight of these LSOAs are in the city of Worcester, including one LSOA covering the Chedworth Drive area of Blackpole/Wardon identified as the 72nd most deprived area of England. Four LSOAs are in the Wyre Forest district, with one LSOA covering the Rifle Range area of Kidderminster identified as the 148th most deprived nationally. Five LSOAs in Redditch district and one LSOA in Malvern Hills district were also identified among the 10% most deprived nationally.



Figure 2. E01032204 – Malvern Hills – in Pickersleigh area



Figure 3. E01032225 Redditch – in Abbeydale area

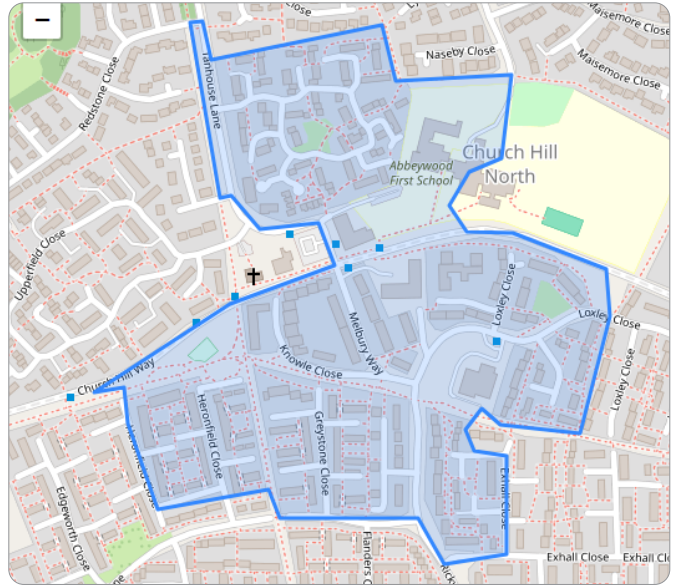


Figure 4. E01032245 Redditch – in Church Hill North area

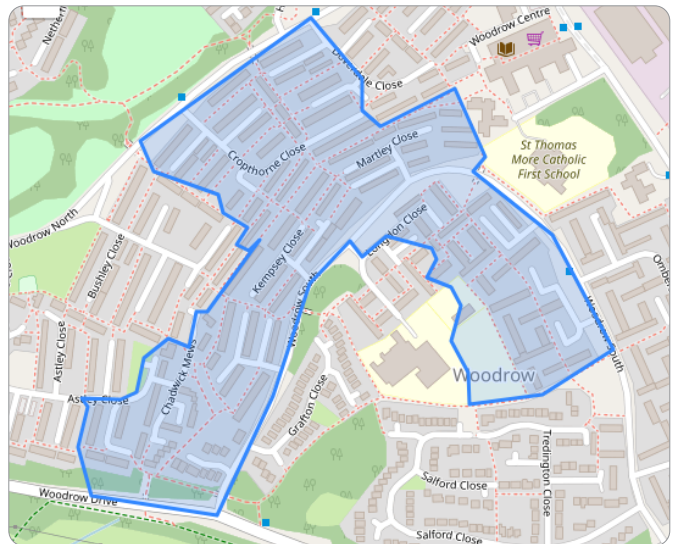


Figure 5. E01032250 Redditch – in Woodrow area

Social continued

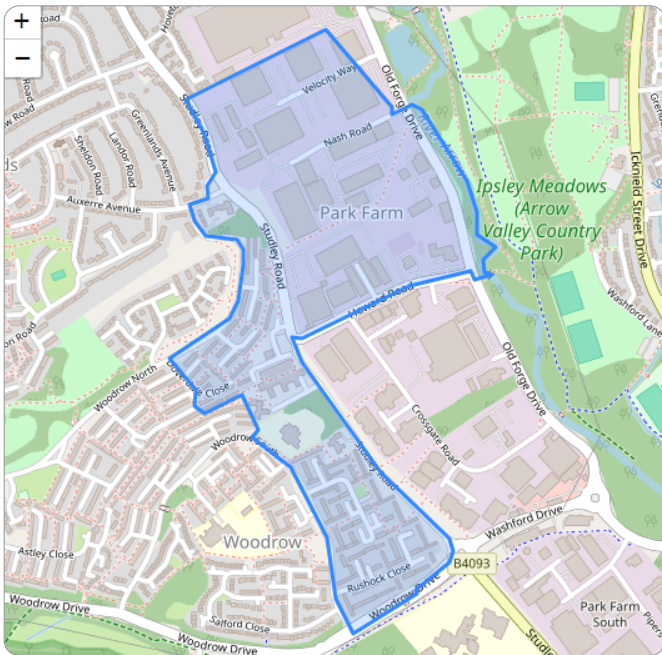


Figure 6. E01032252 Redditch – in Park Farm area

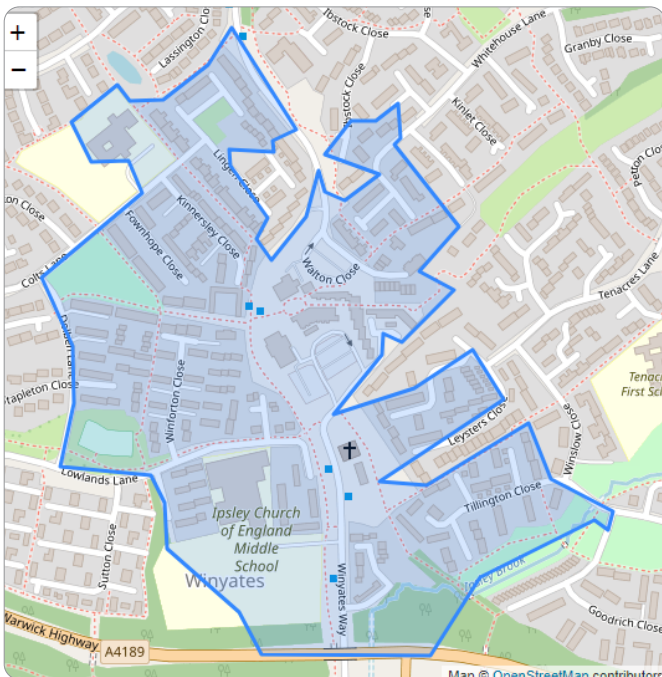


Figure 7. E01032278 Redditch – in Winyates area

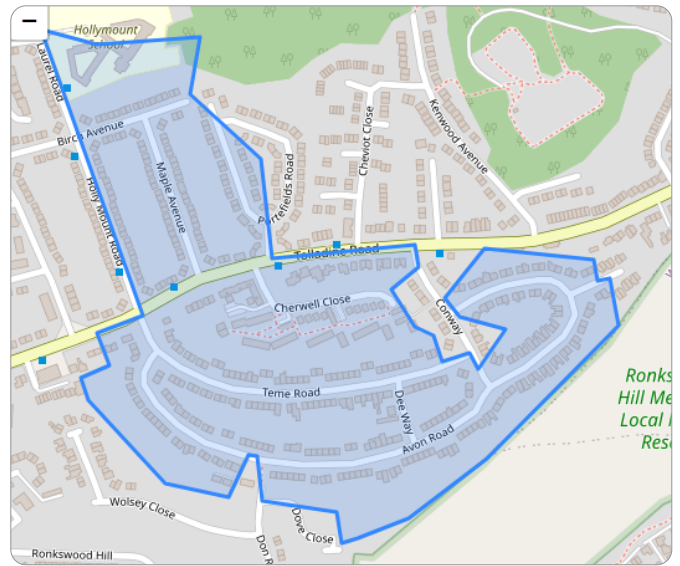


Figure 8. E01032302 Worcester – in Ronkswood area

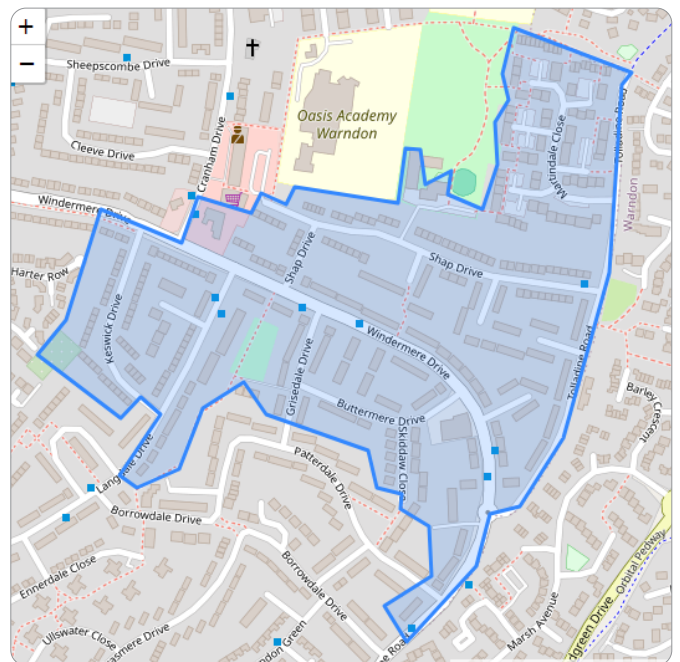


Figure 9. E01032304 Worcester – in Windermere Drive area

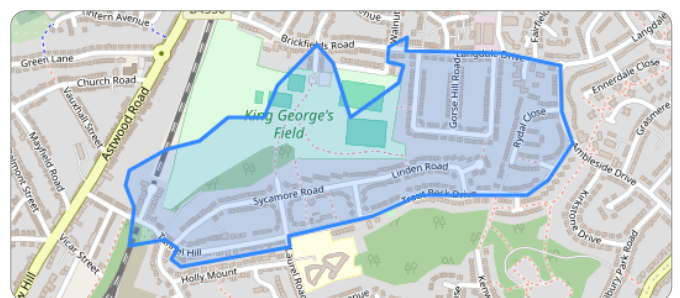


Figure 10. E01032311 Worcester – in King George's Field area

Social continued

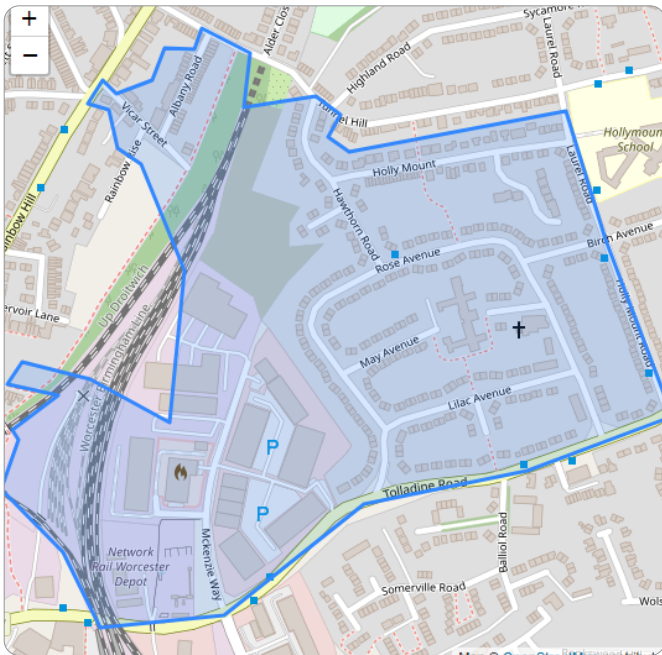


Figure 11. E01032313 Worcester – 475th most deprived nationally – in the Tolladine Road area

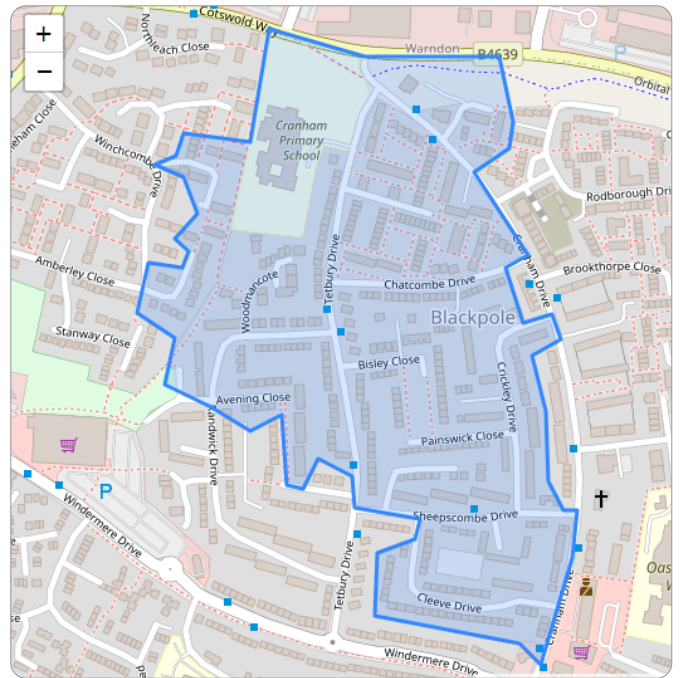


Figure 13. E01032331 Worcester – in Cranham Primary School area, Blackpole

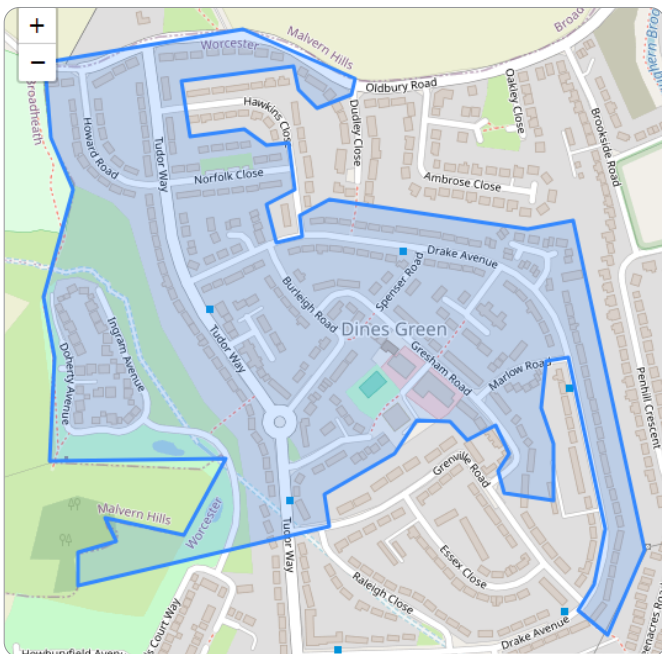


Figure 12. E01032318 Worcester – in Dines Green area

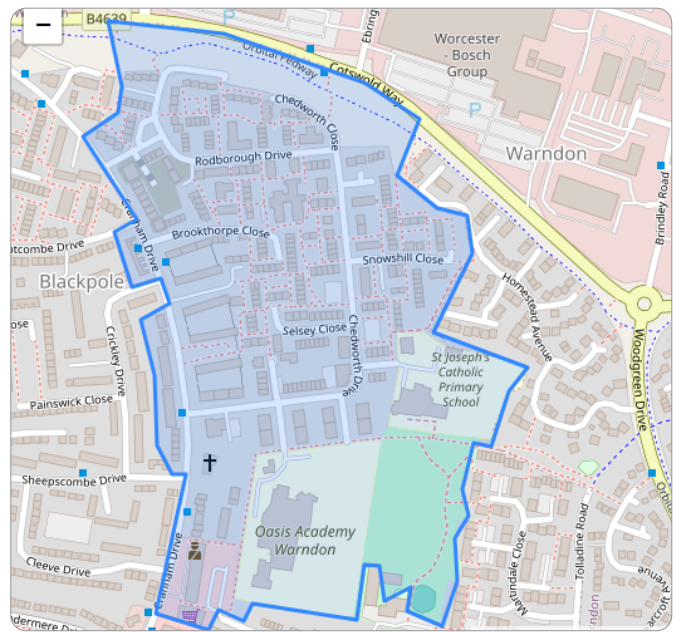


Figure 14. E01032332 Worcester – 72nd most deprived nationally – in Chedworth Drive area, Blackpole/Warndon

Social continued

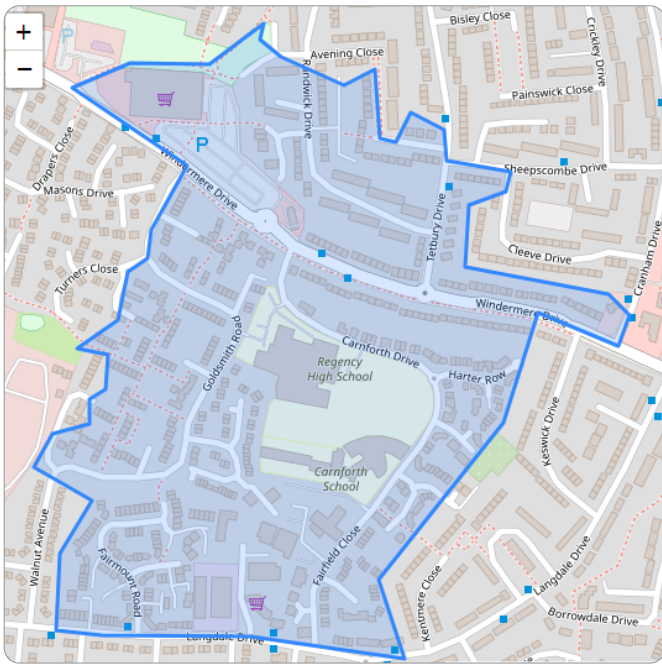


Figure 15. E01032333 Worcester – in Carnforth School area

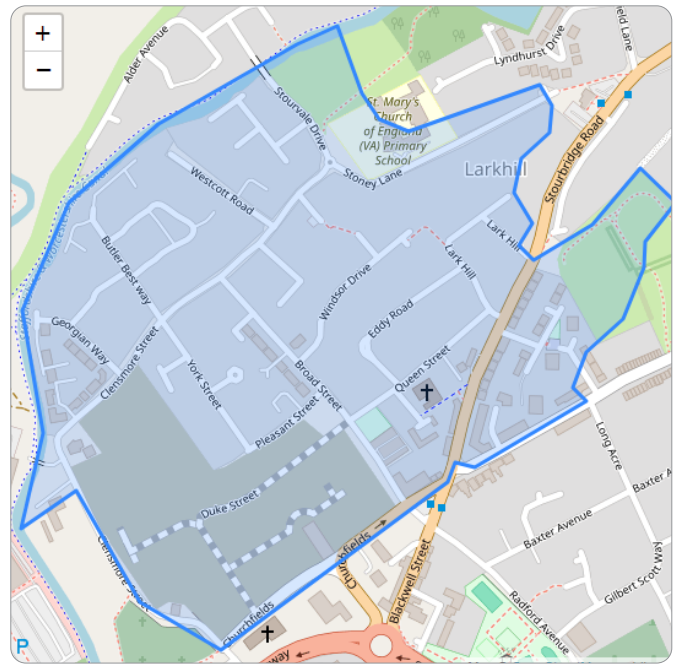


Figure 17 E01032434 Wyre Forest – in Larkhill area of Kidderminster

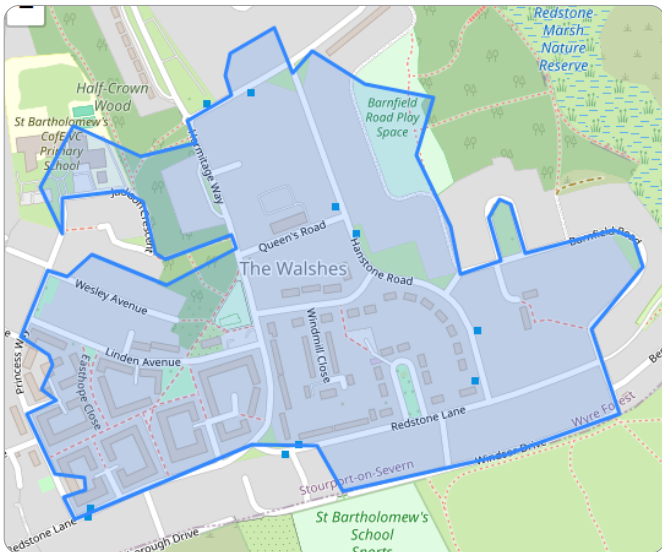


Figure 16. E01032424 in The Walshes area of Stourport

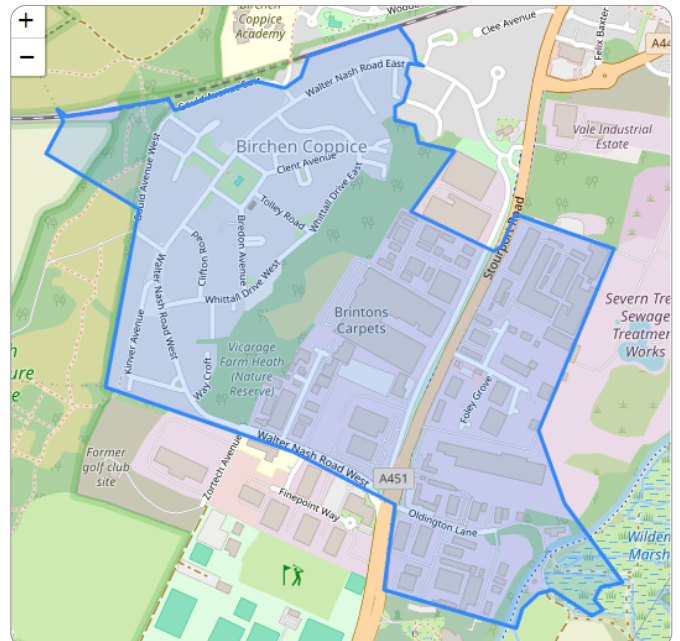


Figure 18. E01032469 Wyre Forest – in Birchen Coppice area of Kidderminster

Social continued



Figure 19. Wyre Forest – 148th most deprived nationally – in Rifle Range area of Kidderminster

Notes: Maps drawn from MapIt:UK – provided free for low-volume non-profit use.

All OpenStreetMap data is available under the Open Database License as set out on the [OpenStreetMap copyright page](#)

Technology

Technology can provide both opportunities and threats for fire and rescue services depending on how it is applied. Advances in technology are helping services to improve data analysis, provide digital solutions to resource mobilisation and enable wider communication with communities and partners, but computer-based systems and applications may also have a risk of system failure or cyber-attacks. Improvements in vehicle manufacture and infrastructure developments such as renewable energy systems are helping to increase road safety and improve air quality, but electric vehicles require powerful batteries and renewable energy is increasingly stored in battery plants, which can be hazardous in the event of a fire or leakage.

As technology continues to develop, it is important that HWFRS continues to harness the advantages and recognises the potential disadvantages to ensure that any risks to the organisation and the wider community are mitigated.

Digital and communication technologies

Progress in computing capabilities has been rapid with new software tools enabling sophisticated analysis of data and trends, new digital advances supporting resource mobilisation and data security, and new communication approaches providing more access to and engagement with communities and partners. At the same time, there is a potential risk of unforeseen system failure and cybercrime looking to exploit vulnerabilities in the computing technologies with a rising incidence of cyber-attacks such as ransomware campaigns, distributed denial of service attacks, hacking and phishing.

System failures and cyber-attacks are both listed as significant risks in the [National Risk Register](#) and also feature as key risks in the [Community Risk Register](#) prepared by the West Mercia Local Resilience Forum. Two examples highlight the potential for disruption and damage across public services. In June 2023, a technical fault in the national 999 emergency phone system meant that many calls were not connected to police, ambulance and fire and rescue services for the time the system was down. While a back-up system was implemented, it was not as effective at locating calls and call-outs may have taken longer and a full investigation into the cause was carried out. In May 2017, the worldwide WannaCry ransomware attack⁵ severely disrupted more than 80 hospital trusts across England, leading to 19,000 appointments being cancelled across the one-week period of the attack. Infected organisations had vulnerabilities relating to unpatched or unsupported Windows operating systems, so were susceptible to attack.

Ensuring operational and organisational resilience to system failures and cyber-attacks will require fire and rescue services to remain vigilant and to invest in protective technologies to manage risk effectively.

HWFRS maintains and regularly reviews a Strategic Risk Register as part of its overall organisational risk management and business continuity arrangements. From April 2024 the Service will use a new Generic Strategic Risk Register developed by the National Fire Chiefs Council's Business Continuity Group. This will improve alignment with national standards and good practice and will help to ensure that all common risks identified by any UK fire and rescue service are considered. The Service has also put in place a Digital

⁵ National Audit Office, Investigation: WannaCry cyber attack and the NHS, April 2018

Technology continued

and Data Strategy to help to maximise the use of technology to deliver organisational excellence and high-quality services. It identifies the technology infrastructure, processes and tools needed to support the organisation, outline citizen interactions to enhance community engagement, deliver value to the community and drive innovation through data analysis. It also highlights security as a key principle to ensure risks and vulnerabilities are fully assessed and security controls are in place, and that privacy requirements and compliance with policy and legislation are followed.

Artificial Intelligence (AI) – potential in the fire and rescue service

Much has been said about the [potential malicious use of Artificial Intelligence](#) and the risks this may pose in terms of cyber-attacks, increased digital vulnerabilities in critical infrastructure, 'fake news', and data leaks. However, there is also great potential for AI technologies to revolutionise the fire and rescue service by providing more efficient, proactive, and accurate solutions for emergency preparedness, response, and recovery. Ultimately, while AI can significantly augment the capabilities of emergency services, it should not replace human judgment and expertise. Trust in AI systems for life-saving situations should be established through a combination of rigorous testing, transparency, human oversight, and a commitment to continuous improvement and ethical use.

Potential future uses of AI within the fire and rescue sector might include:

- Predictive analytics – assisting in predicting potential fire outbreaks or to identify high-risk areas, which will allow proactive measures to be taken
- Enhanced emergency response – gaining crucial information from emergency calls, helping to suggest optimal routes, potential hazards and other situational awareness insights
- Drone technology – swift navigation through dangerous or inaccessible areas to provide live feeds and critical data to support emergency response
- Smart fire detection systems – AI-driven sensors and cameras can detect fires or hazardous situations more accurately than traditional systems
- Risk assessment and planning – analysing building layouts, infrastructure and environmental factors, helping to create more effective evacuation plans and optimising resource allocation during emergencies
- Training and simulation – providing realistic scenarios for firefighters to practice various emergency situations in a controlled environment, helping to enhance decision-making skills and preparedness for real-life incidents
- Post-incident analysis – helping to understand the effectiveness of response strategies, identifying areas for improvement, and optimising future operations
- Language translation and communication – AI-powered translation tools can assist in overcoming language barriers during rescue operations and enabling effective communication

Note also that AI powered search engines were used in preparing this document.

Technology continued

Technological innovation in the fire and rescue sector

A long list of innovations in the fire and rescue sector continue to help to improve the efficiency and effectiveness of operational response. It includes the development of new types of emergency vehicles, firefighting equipment and rescue tools, medical equipment and protective fabrics. The use of mobile technology, drones, thermal imaging cameras, and wearable technology including body-worn cameras are all helping to maintain firefighter and public safety.

Within the Service, technology is helping to reduce the carbon footprint, from using more efficient building materials across the estate and adding electric vehicles to the fleet, to using information technology to streamline working practices and enable remote working.

A good example of technological innovation has been the development of a wildfire response capability, which includes:

- Working closely with private and public sector organisations through the West Mercia Wildfire Partnership in the development and adaptation of existing agricultural equipment (e.g. farm vehicles with umbilical systems that provide long distance water delivery and suppression capabilities),

- Developments in drone technology to enhance detection of wildfires and provide an additional aerial firefighting capability,
- Consideration for using mobile devices to allow firefighters to make accurate fire spread predictions to inform incident commanders of appropriate firefighting tactics,
- HWFRS has three national NFCC Wildfire Tactical Advisors supporting delivery of national and regional wildfire workstreams.

At the national level, a major new critical communication system is being developed to provide fire and rescue, police and ambulance services with voice and broadband data services. The development of an [Emergency Services Network](#) (ESN) aims to deliver extensive coverage, high resilience and secure communications for emergency services during incidents. The proposed nationwide ESN was announced in 2015 and should have been in place by 2020. However, the project has been subject to lengthy delays relating to contracts and costs, and the timeframe continues to remain uncertain.

Technology continued

Vehicle manufacture

Manufacturers are continually developing vehicle safety technology making new cars safer, from technology that mitigates the effects of a collision to features that help to avoid collisions. Despite this, in 2022-23, Fire and Rescue Services across England attended over 31,000 road traffic collisions (RTCs).

Electric vehicles⁶ are a key part of the government's plans for net zero emissions, with a transition away from internal combustion engines and towards ultra-low emission vehicles, including electric vehicles (EVs), over the next 20 years. The benefits include a reduction in air pollution and reduced greenhouse gas emission, with improvements across public health and the environment. Estimates from the [Society of Motor Manufacturers and Traders](#) suggest that there are over 1.1 million electric cars in use at April 2024 (about 1 in 32 cars on the road), and the numbers of EVs are expected to continue rising as petrol and diesel vehicles begin to be phased out in coming years.

Electric vehicles, including e-bikes, e-scooters and hybrid vehicles, use high-voltage lithium-ion battery packs. The batteries can be charged at home, and it is very important that manufacturer's instructions are followed to ensure they are charged safely to avoid a risk of a fire starting. Batteries can also be damaged in a road traffic collision or if they are dropped. A damaged battery can overheat and catch fire without warning and may explode; it can also give off highly toxic gases.

While the number of electric vehicle fires is very low compared to the number of fires in petrol and diesel vehicles, an area of concern for fire and rescue services is the difficulty in extinguishing an electric vehicle fire. An electric vehicle fire can be very dangerous as the flames can take hold rapidly and are difficult to extinguish without proper training, full personal protective equipment and respiratory equipment. Putting out an EV (Electric Vehicle) fire also requires large amounts of water, which can become contaminated and run off into public drainage systems. Many EV manufacturers advise for a controlled burn – letting the fire burn itself out in a secured environment. There is also evidence that electric vehicle fires can reignite hours, days or even weeks after the original fire. This makes transportation, disposal and storage of a fire-damaged EV a challenge⁷.

With the number of electric vehicles on UK roads likely to continue rising over the term of the CRMP, the Service has taken a proactive approach and included the risks of EV fires in all firefighter training and guidance.

Self-driving vehicles

The government has announced that regulatory frameworks are being put in place to ensure the first self-driving vehicles are introduced safely on UK roads, and it expects that approved vehicles may be seen on some UK roads in the next few years. Advanced technologies in self-driving vehicles, such as automated lane keeping systems, could improve road safety by reducing human error, which is reported to be a contributory factor in 88% of all recorded road collisions.

⁶ [The transition to electric vehicles, Office for Budget Responsibility, July 2021](#)

⁷ [Tackling fires in electric vehicles \(ife.org.uk\)](#)

Technology continued

Infrastructure development – energy storage

Renewable energy sources make a substantial contribution to electricity generation in the UK. The main renewable energy sources used in the UK are wind power, plant biomass, solar power and hydroelectric power. In 2023, just over 40% of electricity came from renewables, with wind power contributing 29.4%, biomass 5% and solar power 4.9% and hydropower, including tidal energy, 1.8%⁸.

When the amount of electricity being generated by renewables exceeds the amount needed at the time, it can be stored in a number of ways, one of which uses electrochemical battery energy storage technology. This includes lithium-ion battery storage, which is a relatively flexible and inexpensive system. However, these batteries do degrade over time and present unique fire management challenges⁹.

According to research published in 2021 by Eunomia Research and Consulting and the Environmental Services Association, which was supported by the [National Fire Chiefs Council](#) among others, lithium-ion batteries were responsible for around 48% of all waste fires in the UK each year (equating to approximately 201 waste fires each year)^{10,11}.

Lithium-ion batteries are found in many household electrical items and is the most popular type of rechargeable battery for portable electronics, including mobile phones and laptops. When disposed of in household waste rather than recycled separately, they can cause serious waste fires. These fires can burn for days or even months and can cause extensive environmental damage, with harmful greenhouse gas emissions released into the atmosphere and water pollution caused by run-off from extinguishing the fires. The NFCC expects the problem to get worse unless there is action to divert these types of batteries from the general waste stream.

Biomass and Biogas

Biomass power is electricity generated using plant-based fuels, such as wood pellets, wood chips, bioenergy crops, agricultural and domestic waste. Biogas is commonly known as biomethane and is a naturally occurring and renewable source of energy, resulting from the anaerobic breakdown of organic matter, such as food scraps and animal waste.

There are a number of biomass plants and anaerobic digestion facilities across Herefordshire and Worcestershire. While fires are relatively rare at these facilities, they can be very destructive if they do occur. A lightning strike at a food waste recycling facility in Oxfordshire in 2023 caused a biogas tank of methane to explode causing considerable damage and requiring attendance by fire, police and ambulance services and road closures during the incident.

⁸ [How much of the UK's energy is renewable? | National Grid Group](#)

⁹ [What is renewable energy storage? | Energy storage technologies | National Grid Group](#)

¹⁰

¹¹ [Cutting Lithium-ion Battery Fires in the Waste Industry - Eunomia](#)

Technology continued

Battery Energy Storage Systems (BESS)

Battery Energy Storage Systems (BESS) are devices that enable renewable energy to be stored and released when power is needed most. Lithium-ion batteries are currently the dominant storage technology for large scale plants. The plants usually consist of many banks of batteries housed in what look like shipping containers. Most batteries have battery management systems to prevent over-charging and overheating, but if it fails the structure of the battery may break down leading to 'thermal runaway' where the lithium-ion cell enters an uncontrollable, self-heating state. This can result in extremely high temperatures and is potentially flammable and explosive, leading to the ejection of toxic gases and shrapnel.

A number of high-profile BESS fires have occurred in recent years, including at a [BESS site at Carnegie Road, Liverpool](#) in 2020, which required Merseyside FRS attendance for several days. Currently there is one grid-scale BESS site operating in Herefordshire with several others awaiting construction or in planning.

The Service recognises that BESS are a fundamental part of the UK's move towards a sustainable energy system. Although there are relatively few BESS facilities across the two counties, the increasing number of planning applications for their development suggests that numbers will grow. Alongside [guidance](#) from the National Fire Chiefs Council, the Service has produced a [Position Statement](#) on BESS and has contacted planning authorities to highlight the particular hazards associated with BESS sites and the potential challenges for emergency responders. There is also specific operational training and guidance for all firefighters – evidence?

Solar panels

Solar panels or solar PV (photovoltaic) systems are becoming common installations on domestic and commercial properties. According to the [Fire Protection Association](#), there are more than 1.2 million solar PV installations in the UK and this is expected to grow exponentially. [Changes to permitted development rights rules](#) announced in November 2023 will also mean more homeowners and businesses will be able to install solar panels on their roofs without going through the planning system. While the incidence of fires involving solar PV systems is very low, if they do occur firefighters may face additional risks of electric shock, electrocution and exposure to toxic fumes. Many solar PV installations also include lithium-ion battery storage systems for excess energy. The growing number of installations can also be problematic for fire and rescue services as they are likely to have no prior knowledge of their presence in houses they attend.

There are also larger installations of solar PV systems called solar farms, some of which cover hundreds of acres of land with rows of mounted solar panels, and which also include lithium-ion battery storage facilities. There are a number of solar farms across Herefordshire and Worcestershire and others are planned.

Does HWFRS have a policy/guidance/training in relation to solar PV on rooftops and solar farms? Do we have Intel plans of specific sites at potential risk that include solar farms?

Technology continued

Domestic Energy Storage Systems (DESS)

A Domestic Energy Storage System is essentially a high-powered lithium battery that is stored in a home or attached to a home. The battery charges using power from the grid or a renewable source (such as solar or wind) and then feeds energy back to the home when discharging. DESSs are being installed in council houses across the UK to make them more efficient to run. It will be important to ensure that the Service's Site-Specific Risk Information is up to date.

The NFCC has a [learning package](#) setting out the uses of lithium-ion batteries, their hazards and the potential risks that firefighters may face. Key risks identified are fire and explosion, electrocution, projected debris and contamination. There is also an interactive [UK Renewables Map](#), which shows the locations of existing and planned developments including a number of wind, solar PV, BESS, anaerobic digestion, landfill gas, and energy from waste sites across Herefordshire and Worcestershire.

Environment

Having a detailed knowledge of the natural and built environment and geographical borders within which the fire and rescue service operates is essential to understanding risk and resourcing requirements. Significant issues affecting the environment are climate change and the emergence of pandemic and infectious disease.

Impact of Climate Change

The most pressing environmental challenge for all fire and rescue services is climate change and its impact on the natural and built environment and the community. While there are visible impacts of this through rising temperatures and increased flooding, wind, rain and storm intensities, along with the increased threats of drought, wildfire, air and water pollution, there are also hidden impacts such as biosecurity with the risk of invasive species and seasonal changes to the food chains for many species.

The [World Health Organisation](#) identifies the climate crisis as the greatest threat to global health in the 21st century. Among the complex health challenges, it cites extreme weather events, the spread of infectious diseases and the exacerbation of chronic conditions as serious threats to human wellbeing.

The impacts for the UK, although less than for some other parts of the world, will still be significant. There will be an increase in heatwave days and a longer heatwave season, resulting in greater risk of wildfires and there will also be periods of heavier rainfall increasing the likelihood of widespread flooding. Such events will have significant impact on our Service; therefore, it is important that we ensure our operational response capabilities keep pace with this area of change and that we act and set an important example by reducing our own impacts on the environment.

The [National Risk Register](#) highlights a number of key risks of concern to fire and rescue services:

- More intense rainfall and wetter winters will increase the likelihood of more fluvial (river, stream, brook, etc.) and surface water flooding (when rainfall overwhelms the capacity of drainage systems and surface water sewers). This may lead to widescale and localised flooding events, with the risks associated with rescue from water and breaches of flood defences.
- Hotter summers will increase the likelihood of the risk of wildfires, leading to more forestry, grassland and other outdoor fires. The frequency and intensity of such fires may also change as the wildfire season is likely to extend beyond the late spring period into the summer months. This can have a significant impact on the ability to extinguish fires using conventional methods. Early season outdoor fires tend to be surface fuels, such as grasses and heathers, as they are drier than material below the surface, and can be dealt with by conventional equipment. As the season extends into the hotter summer months, firefighting can become more difficult as not only surface fuel burns, but also sub-surface fuels. This may result in larger wildfires and will require more specialist equipment and firefighting tactics and resources.
- More extreme heat with higher temperatures during heatwaves is likely to increase. This is likely to have an adverse impact on community health and will also affect wildlife and vegetation through water shortages and longer periods of drought. Heatwaves also tend to be followed by other hazards such as severe thunderstorms and poor air quality.

Environment continued

- More extreme weather conditions such as storms and high winds are increasingly likely, with the potential for damage to structures and properties and disruption to infrastructure such as power lines. As with other extreme weather such as low temperatures and periods of heavy snowfall, rural communities are likely to be affected longer than towns and cities.

Fire and rescue services have an important role to ensure the risks these hazards present are minimised and mitigated as far as possible. Through our work with the West Mercia Local Resilience Forum and the safety campaigns carried out by the Service, we will also continue to ensure that local communities are made aware of potential risks and are prepared to act in an emergency.

Adapting to climate change – mitigation and sustainability

Carbon dioxide is Earth's most important greenhouse gas: a long-lived gas that absorbs and radiates heat, including back towards the Earth's surface. Together with methane, nitrous dioxide and a number of chemicals used in cooling and refrigeration, aerosol sprays and other processes, it is estimated that their combined warming influence has increased substantially over the last several decades. This has primarily been because of human activities, with carbon dioxide concentrations in the atmosphere rising more than natural processes can remove, mostly because of the fossil fuels that people are burning for energy¹².

The UK government has pledged to reduce greenhouse gas emissions to net zero by 2050. Net zero means taking as much warming gases, such as carbon dioxide, out of the atmosphere as it puts in.

HWFRS recognises that it also has a responsibility to do as much as it can to reduce its own impact on the environment. Through the [Environmental Sustainability Plan 2021-25](#), the Service has set out a strategic commitment to mainstreaming carbon reduction and protecting the environment. Key areas of focus include property, fleet, technology, travel, procurement, waste, supplies and equipment, water, finance, behavioural change and the prevention and mitigation of emergencies.

Pandemic and emerging infectious diseases

The highly contagious COVID-19 pandemic has highlighted a significant risk to national and global health. It has put severe pressures on the health and social care sector and the overall impact on society, education and the economy may last several years. All sectors of society were affected, including the fire and rescue sector, which had a significant role in responding to the pandemic.

An outbreak of an emerging infectious disease, such as Ebola or Middle East Respiratory Syndrome (MERS), could also result in large numbers of people falling ill. There are also potential risks from animal diseases, such as an outbreak of foot and mouth disease, avian influenza and swine fever, each of which has affected livestock across Herefordshire and Worcestershire in recent years. Disease control measures would include containment, isolation and culling.

¹² [Climate Change: Atmospheric Carbon Dioxide | NOAA Climate.gov: Annual Greenhouse Gas Index | GlobalChange.gov](#)

Environment continued

Built and Natural Environment and Infrastructure

Understanding and assessing potential hazards in the built and natural environment of the two counties forms a crucial element of the Service's operating context. The focus is on those buildings, sites and infrastructure developments that may have an impact on the resource needs of HWFRS's response, protection and prevention services.

Key buildings that may present increased risks or are critical to communities:

- Commercial, industrial and public buildings
- Hospitals, care homes,
- Prisons,
- COMAH industries
- Sports grounds
- High rise buildings
- Schools, colleges and universities
- Heritage buildings, museums, stately homes, art treasure/archives, listed properties
- Hotels, hostels –

Key sites and sensitive locations where pollution, contamination, fire, flood or other damage could have a long-lasting impact:

- Aerodromes
- Rivers, canals, marinas

- Tourist attractions (eg West Midlands Safari Park, Severn Valley Railway)
- Areas of Outstanding Natural Beauty
- Sites of Special Scientific Interest (SSSI)
- Agricultural, grassland and woodland sites
- Heritage sites
- Mobile home sites
- Gypsies, Travellers and Travelling Show people sites
- Caves and mine workings
- Ecologically sensitive areas

Key infrastructure developments include:

- Road and motorway networks
- Rail networks and stations
- Transport hubs
- Critical water, oil, gas, electricity supplies and pipelines
- Reservoirs, dams
- Waste, recycling plants, scrapyards
- Solar farms
- Wind turbines
- BESS and other battery storage facilities

Environment continued

Other considerations include the use of materials in buildings and construction:

- Building construction and cladding methods – eg thatched, timber-framed
- New construction materials – eg composite fencing and decking material

HWFRS understanding and assessment of potential risks posed is maintained through CFRMIS records and Intel information.

Future developments across Herefordshire and Worcestershire are set out in the strategic planning documents prepared by local authorities. These documents show the main areas for housing development, key employment sites and sites with environmental designations. They include:

- [Herefordshire Local Plan Core Strategy 2011-2031](#)
- [Bromsgrove District Plan 2011-2030](#)
- [Borough of Redditch Local Plan No.4 \(2011-2030\)](#)
- [Wyre Forest District Local Plan \(2016-2036\)](#)
- [South Worcestershire Development Plan \(2006-2030\)](#)

The two counties also maintain transport plans, which include major transport schemes planned in the term of the CRMP:

- [Herefordshire Council Local Transport Plan 2016-2031 Strategy](#)
- [Worcestershire's Local Transport Plan \(LTP\) 2018-2030](#)

Legal

There are a wide range of legislation and frameworks that influence how Fire and Rescue Services deliver their Prevention, Protection and Response activity. It is important to ensure that legislation that directly and indirectly affects the Service is considered in relation to setting strategic objectives in the CRMP, and any potential risks are identified. The main legislation and their potential impact are summarised below.

Fire and Rescue Services Act 2004

The Fire and Rescue Services Act 2004 details the key responsibilities of the FRS and sets out the provisions required to meet its statutory duties. It provides the essential framework for defining strategic objectives, identifying resources, and developing strategies to mitigate risk. It sets out the powers of Fire and Rescue Authorities and the required functions of Fire and Rescue Services, including the core functions in relation to fire safety, firefighting, road traffic accidents and other emergencies.

The CRMP will need to set out how it proposes to deliver its statutory duties, how these intend to mitigate community risk and how they will be resourced.

Regulatory Reform (Fire Safety) Order 2005, the Fire Safety Act 2021, and the Building Safety Act 2022

The requirements of this legislation place a duty on building owners or managers responsible for non-domestic premises such as where people work, visit or stay, including workplaces and the non-domestic parts of

multi-occupied residential buildings in relation to ensuring fire safety. The provisions extend to responsibilities for completing fire risk assessments, keeping fire and rescue services informed on building safety arrangements and further requirements in relation to the design and materials of the external walls of high-rise residential buildings.

Fire and Rescue Services have a key role as an enforcing authority to ensure that the legislation is complied with. This may involve providing advice to building owners and inspecting premises. The CRMP will need to ensure that the resourcing demands to meet the requirements are managed, including ensuring Protection teams are equipped to meet new legislation and activities are aligned accordingly.

Building Regulations 2010 (and Amendment Regulations 2023)

The Building Regulations 2010 apply to all buildings to make sure they are safe for people who are in or around them. As an enforcing authority under the Regulatory Reform (Fire Safety) Order 2005, the Service must be consulted on relevant planning applications to provide fire safety advice and guidance. The Amendment Regulations 2023 include additional provisions in relation to a more stringent regime for the design and construction of higher-risk buildings, set out in [Higher-Risk Buildings Regulations 2023](#).

Terrorism (Protection of Premises) Bill 2023

The government has introduced a Bill that will require venue operators to consider the risk of terrorist attacks and to take measures proportionate to the risk to protect the public. The Bill includes a requirement for those responsible for certain public premises or public events must cooperate with fire and rescue service personnel in relation to fire safety. The Bill specifies certain premises with a public capacity of 100 or more individuals and enhanced duties if public capacity is 800 or more. It will also apply to certain public events with a capacity of 800 or more individuals. The Bill is also known as 'Martyn's Law' in tribute to Martyn Hett, who was among 22 people killed in the Manchester Arena terrorist attack in 2017. It was also formerly referred to as the Protect Duty.

The Bill is likely to become law during the term of the CRMP and will need to be considered in relation to potential additional requirements it could place on Protection teams. This may include providing advice, guidance and inspection in terms of fire safety, responding to terrorist attacks at public venues and working with other services to ensure public safety.

How many premises and public events would this apply to in H&W?

Civil Contingencies Act 2004 and Chapter 4 Local responder risk assessment duty 2012

The Act establishes clear roles and responsibilities for responders involved in a multi-agency response to civil emergencies, including a requirement to assess the risk of an emergency occurring and to maintain plans for responding to an emergency. The Fire and Rescue Service is a [Category 1](#) responder under the Act and its key role is to save life and to protect property and the environment.

To satisfy this legislation, the [West Mercia Local Resilience Forum](#) has been established. As a member of this Forum, HWFRS must maintain effective multi-agency arrangements for major emergencies and minimise the impact of those emergencies on the public, property and environment.

The CRMP will need to reflect the collective arrangements in place to ensure an appropriate response to incidents through a multi-agency, collaborative and cooperative approach.

National Risk Register 2023

The National Risk Register highlights a range of risks that have the potential to cause significant disruption to the UK. Although not all the risks are relevant to HWFRS and its geographical area, the CRMP will need to assess how the risks may impact on decision making or resource availability. For instance, HWFRS is part of the national [Resilience Capabilities Programme](#), which means the Service provides specialist support around the country in the event of a national emergency or large-scale incident.

Fire and Rescue Services (Emergencies) (England) Order 2007

The Order references the need to make provisions for specific activities, including CBRNE¹³, specialist rescue, call handling, information gathering, training, and responding to incidents outside of the Service area. These may influence response considerations in the CRMP, including the potential impact on resourcing decisions and planning assumptions. It may also influence how the Service supports and utilises National Resilience.

Fire and Rescue National Framework for England 2018

The National Framework provides detail on the priorities and objectives government has set for the FRS and the areas of expected delivery, including identifying and assessing risks, preventing and protecting against fires, and responding to emergencies. The CRMP will need to consider all relevant factors.

Policing and Crime Act 2017

As noted under the Political considerations above, this legislation provides scope for FRS governance arrangements to be assumed by Police, Fire and Crime Commissioners (PFCCs). If there is a change in governance at HWFRS within the term of the CRMP, the political objectives and aspirations will need to be incorporated, as they could have a major influence on strategic objectives and decision-making.

The Act also created a duty for the FRS to identify and seek collaborative opportunities in the interest of increasing efficiency and effectiveness. HWFRS has many beneficial

[collaborative arrangements](#) with partner agencies and the CRMP will need to identify if such arrangements would assist in delivering its aims and priorities.

Police, Crime, Sentencing and Courts Act 2022

The Act includes provisions for a [Serious Violence Duty](#), which requires the police, local authorities, fire and rescue authorities, health authorities and others to work together to reduce violent crime, including domestic abuse and sexual offences. Education authorities, prisons and youth custody agencies may also be involved where appropriate. The legislation gives powers to share data and information for the purpose of preventing and reducing serious violence, and it encourages early intervention with young people.

Data Protection Act 2018

The Act ensures that data is accessed and used legally throughout all components of the CRMP process. The CRMP will need to use the data appropriately and ensure compliance with the [General Data Protection Regulation 2018](#) (GDPR). Following consultation on proposals to reform the UK's data protection regime post-Brexit, the government introduced a [Data Protection and Digital Information Bill](#), which intends to replace the European Union's GDPR with a new UK version. It includes provisions on the disclosure of information to improve public service delivery, and for agreements on sharing information for law enforcement purposes. As of December 2023, the Bill is in its final stages and is likely to be enacted during the term of the CRMP.

¹³ Chemical, Biological, Radiological or Nuclear Emergency

Legal continued

Freedom of Information Act 2000

The Freedom of Information Act 2000 provides the general right of access to information which Hereford & Worcester Fire Authority holds. One of the requirements of the Act is that public authorities should be clear and proactive about the information they will make public. To do this, the Service has produced a [Publication Scheme](#), setting out the classes of information which are published or intended to be published, and the manner in which the information will be published

Equality Act 2010

The Equality Act 2010 legally protects people from discrimination in the workplace and in wider society. It includes a [public sector Equality Duty](#) which requires public bodies to have due regard to the need to:

- eliminate discrimination
- advance equality of opportunity
- foster good relations between different people when carrying out their activities

It includes the [Gender Pay Gap Information Regulations 2017](#), which requires the Service to publicly report a range of gender pay information. To help to address this, the Service publishes an annual [Equality & Gender Pay Gap Report](#) on the Service website.

Worker Protection (Amendment of Equality Act 2010) Act 2023

Introduces a new duty on employers to take reasonable steps to prevent sexual harassment at work. It is due to take effect in October 2024.

Localism Act 2011

Gives local authorities more power to make local decisions regarding the allocation and provision of local services. This may affect the CRMP process as these decisions may influence the strategic objectives and activities within the CRMP.

Local Government Act 2000

Broadened the ability of local authorities to make local decisions in respect of promoting economic, social and environmental wellbeing. It provides opportunities for services, such as fire and rescue services, to develop joint strategies with local organisations in support of achieving community objectives.

Children Act 2004

All organisations, including fire and rescue services, have a duty to help safeguard and promote the welfare of children.

Health and Safety at Work etc. Act 1974 and the Management of Health and Safety at Work Regulations 1999

Applies to all aspects of workplace activity. The CRMP will need to ensure that the health, safety and wellbeing of employees is at the forefront of all decisions relating mitigating community risk to make sure employees are not put at unnecessary or excessive risk.

Emergency Workers (Obstruction) Act 2006

The Act makes it an offence to obstruct or hinder emergency service personnel while responding to an emergency, whether physical or not.

Legal continued

Human Rights Act 1998

The CRMP will need to ensure that risk management and resourcing decisions carefully consider Article 2 of the Act, which places a responsibility on public bodies to consider an individual's right to life when making decisions that might put them in danger or affect their life expectancy.

Strikes (Minimum Service Levels) Act 2023

The Act enables minimum service levels to be set in key sectors, including fire and rescue services, during periods of strike action. It aims to ensure that essential services are not disrupted by strike action.

In addition to the legislation above, there are a number of government bills that may be progressed throughout the term of the CRMP. Their progress will need to be monitored as appropriate. Possible bills include:

- National Security Bill – powers to tackle national security threats such as terrorism
- Climate Change Bill – to set legally binding targets for reducing greenhouse gas emissions
- Health and Care Bill – reforms to the UK health and care system
- Modern Slavery Bill – to strengthen laws with new offences for human trafficking and modern slavery



HEREFORD & WORCESTER
HWFR
FIRE AND RESCUE SERVICE



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