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# **Fire and Rescue Service**

# **PESTLE 2022-23**

December 2022



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# Introduction

The PESTLE provides a forward-looking assessment of the political, economic, sociocultural, technological, legal and environmental drivers that might impact upon and shape service delivery over the short, medium and long term.

The aims of the PESTLE are to:

* Make colleagues aware of the issues that may affect GMFRS
* Inform the development of delivery plans and the Fire Plan
* Support the service to identify potential risks and opportunities
* Instigate discussion at a strategic level and inform in the creation of new strategies and the review of existing ones.

For further information, please contact Jim Cessford - [cessfordj@manchesterfire.gov.uk](http://www.bbc.co.uk/news/uk-england-35842488)

# Political

##

## Fire Service Reform – White Paper

*Reforming our Fire and Rescue Service* is the Government’s [White Paper](https://www.gov.uk/government/consultations/reforming-our-fire-and-rescue-service) on Fire reform. The consultation has three themes – People; Professionalism; Governance. The consultation closed on July 26, 2022. The Government has not yet responded.

### Headline proposals

1. FRS should be able to widen the role of their firefighters without national negotiations.
2. No current plans to remove the right to strike but Civil Contingencies Act will be reviewed.
3. An independent review into the current pay negotiation process.
4. Entry requirements for fire officers and a new leadership programme.
5. New systems to improve data use and sharing.
6. A new central research capability.
7. A statutory code of ethics for FRS and a mandatory oath for all employees.
8. An independent college of fire and rescue.
9. Transfer governance to directly elected individuals such as PCC and mayors.
10. Create operational independence for CFO.

### People

**Role of the firefighter:** Current working practices are described as “highly inflexible”. The Government believes CFO should be able to make decisions on the basis of risk and resources: *“While it is right that all relevant trade unions have a role to play in discussions on terms and conditions and the health and safety of their members, this must not come at the expense of safe and sensible progress and efficiency when communities need action.”*

The associated questions asked whether FRS should have flexibility to deploy resources beyond core duties and whether they should play an active role in supporting the wider health and public safety agenda.

**Industrial action:** The Government is not proposing to remove the right to strike, but “public safety needs to be ensured.” The Home Office is reviewing the Civil Contingencies Act and will work closely with the NFCC to ensure each service has a robust business continuity plan that considers challenges, including the impact of industrial action.

The Government is likely to gauge public support / sympathy towards the potential forthcoming industrial action to determine whether they revisit the question of a firefighter’s right to strike. Removing the right to strike has been recommended by both the Adrian Thomas Review and more recently in the 2021 State of Fire report. Any attempt to remove a firefighter’s right to strike will undoubtedly be met with industrial action.

**Pay Negotiation:** TheGovernment will commission an independent review into the current pay negotiation process and consider if it is fit “for a modern emergency service”.

If the forthcoming potential industrial action takes place, the Government is likely to use it as evidence that the current pay negotiation process is not fit for purpose, therefore justifying a radical reform of the NJC and the current process. This has already been recommended by both the Adrian Thomas Review and more recently in the 2021 State of Fire report.

**Talent and development:** *“HMICFRS found that services need to do more to support future leaders, and that diversity in senior leadership positions is even more limited than in the wider workforce.”*

The Government is concerned there are no standardised national progression routes or consistent levels of education or experience required for entry into roles. The Government will explore lessons from national talent and recruitment schemes such as Teach First, Police Now, Unlocked and the civil service’s Fast Stream scheme model to establish high-potential development programmes.

The associated questions ask whether consistent entry requirements should be explored for FRS roles; and whether other roles, in addition to station and area managers, would benefit from a direct entry and talent management scheme.

### Professionalism

**Leadership:** The Government wants to develop a mandatory 21st century leadership programme for progression to senior roles. It is looking to apply the police Strategic Command Course model.

**Data:** Government wants FRS to use and share data more effectively. The associated questions ask whether the following activities are priorities for FRS regarding data use: A national data analytics capability; Data-focused training; Consistent approaches to structuring data; Clear expectations for data governance; Securing data-sharing agreements (with local and national partners, including LRFs)

**Research:** TheGovernment is proposing a central fire and rescue research capability that would collaborate with others including FRS; conduct and commission research; collate research undertaken elsewhere to avoid duplication of effort.

**Ethics and culture:** The Government wants to address what HMICFRS calls “a toxic culture” in some FRS. It is proposing to create a statutory code of ethics for FRS, placed on services not individuals. The associated questions ask whether the Code should be made statutory and whether the duty to ensure FRS comply with the Code should be placed on “operationally independent chief fire officers”.

The Government wants to introduce a statutory oath for all FRA employees which may include affirming such principles as acting with integrity; and supporting equality, diversity and inclusion. Breach of the oath would be an employment matter for the FRA, rather than a legal matter.

**College of Fire and Rescue (CoFR):** The Government proposes a CoFR to be the independent body to support FRS improvement. The CoFR would aid FRS in implementing proposed reforms. The Government would like to hear from potential hosts to understand where the proposed college could be located. The proposed college will take on the functions currently undertaken by the Fire Standards Board. The independent CoFR could have the following remit:

* Leadership - developing and maintaining Leadership Programmes and direct entry schemes.
* Data - providing a home for a strategic centre of data excellence.
* Research - housing a central research function.
* Clear Expectations - taking on responsibility for the creation of fire standards, building on the work of the Fire Standards Board.
* Ethics - powers to create and maintain the proposed statutory code of ethics and oath.

The Government wants to ensure the CoFR has the power to further improve FRS and is considering giving it legislative powers. These could mirror the powers held by the College of Policing or could involve the extension to the College of Fire of the powers held by the Secretary of State under the FRS Act 2004. Legislative powers could include the power to issue statutory codes of practice.

### Governance

The Government’s preferred governance model is based on the following criteria:

* A single, elected – ideally directly elected – individual who is accountable for the service rather than governance by committee.
* Clear demarcation between the political and strategic oversight by this individual, and the operationally independent running of the service by CFO.
* The person with oversight has control of necessary funding and estates.
* Decision-making, including budgets and spending, is transparent and linked to local public priorities.

The Government is considering legislation that could set out the role and function of an FRA including its oversight and scrutiny functions, specifying how transparency objectives should be met, and clarifying the relationship between political oversight and operational decision making. If not in statute, this could be included in the Fire and Rescue National Framework.

Any changes to governance are likely to see more FRS with similar governance to our own. This could be an opportunity for GMFRS for sharing experience / best practice and position itself as an innovator*.*

**Operational independence**

The Government is concerned that many CFO are *“required to engage in prolonged negotiation at both the national and local levels on matters that should be within their operational responsibility*.” They are proposing operational independence for CFO and clear demarcation between the CFO and the Executive Leader along the following lines:

* Executive leader: Setting priorities; Budget setting; Setting precept; Setting response standards; Opening and closing fire stations; Appointment and dismissal of CFO.
* CFO*:* Appointment and dismissal of other fire service staff; Allocation of staff to meet strategic priorities; Configuration and organisation of resources; Deployment of resources to meet operational requirements; Balancing of competing operational needs; Expenditure up to certain (delegated) levels.

The Government is also considering whether to legislate to make CFO corporations sole and therefore a legal entity in their own right. This could clarify their role and responsibilities, and make CFO the employers of all fire personnel. This would mirror the arrangement in policing.

**Risk management and strategic plans**

The Government wants to clarify the distinction between strategic and operational planning. They want a clear distinction between a strategic fire and rescue plan established by the FRA that sets priorities for the service on behalf of the public, and an operational plan that would become the responsibility of the CFO and would deal with how strategic priorities will be met and risks mitigated. This is what we already decided to implement in GM and again places us as innovators.

**Responses to the White Paper**

**FBU:** “At the heart of this white paper is the threat of an attack on workers’ rights by undermining collective bargaining and a proposal to remove frontline firefighters’ voices…Collective bargaining is a well fought for mechanism by which frontline firefighters have a say on pay, terms and conditions. It is their basic democratic right.” *Matt Wrack*

**LGA:** “The LGA is pleased to see the publication of the long-awaited white paper, it’s especially positive that government has not said it will make mandatory changes to fire governance, and is consulting on a range of governance models for fire and rescue services.” *Cllr Ian Stephens*

**NFCC:** “NFCC has a significant role to play in advising and delivering on reform and improvements. However, no one organisation alone holds the key – we want to work with the various fire service bodies to inform and implement further improvements.” *Mark Hardingham*

## HMICFRS – State of Fire Report 2021

[Report and press release here](https://www.justiceinspectorates.gov.uk/hmicfrs/publications/state-fire-rescue-annual-assessment-2021/)

Recommendation 1**:** Home Office, NFCC and LGA, in consultation with the Fire Standards Board and Association of Police and Crime Commissioners, should establish a programme of work that will result in **consistency in the following four priority areas**, including a common set of definitions and standards for FRS :

* Identifying and determining risk as part of the IRMP process.
* Identifying and measuring emergency response standards and approaches.
* Defining what are high-risk premises for the purposes of fire protection.
* Setting an expectation for how frequently high-risk premises, and parts of those premises, should be audited for compliance with fire safety legislation.

Recommendation 2**:** As part of the next spending review, the Home Office in consultation with the fire and rescue sector should address the **deficit in the fire sector’s national capacity and capability to support change**.

Recommendation 3:The Home Office, in consultation with the fire and rescue sector, should review and with precision **determine the roles of: (a) fire and rescue services; and (b) those who work in them**.

Recommendation 4**:** The Home Office, the LGA, the NFCC and trade unions should consider whether **the current pay negotiation machinery requires fundamental reform.** If so, this should include the need for an independent pay review body and the future of the ‘Grey Book’.

Recommendation 5:The Home Office should consider the case for legislating to **give chief fire officers operational independence**. In the meantime, it should issue clear guidance, possibly through an amendment to the Fire and Rescue National Framework for England, on the demarcation between those responsible for governance and operational decision making by the chief fire officer.

Recommendation 6**:** The NFCC, with the LGA, should produce **a code of ethics for FRS**. The code should be adopted by every service in England and considered as part of each employee’s progression and annual performance appraisal.

Please see Appendix A for more detail. It is worth noting that Sir Tom Winsor is no longer Chief Inspector. This role is now taken by Andy Cooke. It is possible that the focus of HMICFRS may shift slightly as a result. In September 2022 a new Fire Minister was also appointed, [Jeremy Quin MP.](https://en.wikipedia.org/wiki/Jeremy_Quin)

## Adrian Thomas Review

Although it was published back in 2016, both HMICFRS and the Home Office continue to reference the [Adrian Thomas Review](https://www.gov.uk/government/publications/conditions-of-service-for-fire-and-rescue-staff-independent-review) when discussing Fire reform. The Review called for a reform of the NJC and the Grey Book, and for the Government to restrict firefighters’ right to strike. Recommendations include:

* Slim down and modernise the Grey Book, removing duty systems and reference to role maps and national occupational standards and replace with contracts of employment.
* The NJC should be retained for national pay bargaining for basic pay whilst reforming itself to represent employers and employees on a more local basis for all other conditions of service including incremental pay for acquiring competences beyond ‘safe to ride’.
* The NJC should operate regionally to reflect the requirements of the different FRA whilst retaining a national umbrella with respect to basic pay.
* The chair of the NJC should instigate an independent review of the structure and representative make-up of the NJC to enable it to perform effectively at both a local and national level.
* Government should consider whether strike action is incompatible with the expectations that the public has of an emergency service. Government should remove the protection afforded under the Act to unions when their collective strike action, or action short of strike, impedes the FRS from making an emergency response.

# Economic

## Public sector spending and fire service funding

Before Jeremy Hunt became chancellor, the government shelved plans for a new spending review due to lack of time and this is expected to remain the case. The government will be sticking with the spending review package of 2021. However, rising inflation is eating into the real-terms generosity of the departmental spending plans set out a year ago. Stated government policy is to leave these plans unchanged despite rising pressures. Restoring their generosity would require an additional £14 billion of spending in 2023–24 and £23 billion in 2024–25, under Citi’s forecasts for the relevant measure of inflation (the GDP deflator).

Government fiscal policy is difficult to follow at the moment. What is clear is that significant savings have to be found from somewhere. FRS have never been a protected service like Education and Health have been in the past. It is highly likely that our sector is facing further cuts to its budget, or at the very least, no protection from high inflation.

The amount of money we have to spend is already less than it was in 2010 and significantly lower if inflation is considered. In 2010/11, baseline Government funding for GMFRS was £75m. In 2022/23, baseline Government funding for GMFRS is £41m. This is a reduction of 45%. In 2022/23, GMFRS is receiving a further £15m via business rates. This brings the total up to £56m. This is still a reduction of 25% since 2010/11. (Other Government funding in 2022/23 is in the form of one-off grants totalling £8m, £5.6m of which is the pensions grant to cover the cost of the increase in employers’ contributions.) To ensure we can retain a safe number of firefighters, GMFRS has had to increase the amount of money it collects via the precept; from £42m in 2010/11 to £55m in 2022/23, an increase of 31% for our residents. To at least maintain our current activity and firefighter numbers, an inflationary increase to fire funding is needed as a minimum.

The service does not receive capital grants to modernise and improve the energy efficiency of our stations, and to make our training facilities as effective as possible. We are forced to borrow money to do this. We are calling on Government to provide capital grants for these long-term improvements to effectiveness and efficiency.

Even before the current volatility, FRS were facing economic pressure. The issues facing the Fire sector now include the following issues:

* Securing an inflationary increase for FRS to maintain firefighter numbers.
* Incorporating Protection funding into the baseline funding.
* New Burdens being placed on FRS through the introduction of new legislation.
* The provision of ongoing funding to cover the Pensions Grant.
* Implications of CV-19 on taxbase / collection fund and local flexibility around council tax for FRS**.**
* The rising cost of energy and the impact this is having on running our buildings and equipment, and the price of goods.
* The war in Ukraine and the subsequent increase in the cost of certain imports such as energy, and the lack of availability of certain products, such as ballistic PPE.
* The volatility of the pound and the impact on the cost of imported goods.
* The rise in interest rates and the increase on loan repayments.
* Potential industrial action and the cost of providing alternative fire cover.
* Providing an unfunded wage increase to help our staff deal with the cost of living crisis.

Whilst the impacts of CV-19 and subsequent lockdown are still being played out, it will undoubtedly affect households’ and business’ ability to pay their council tax and business rates.  Analysis indicates a significant negative impact on council tax collection, which will affect the GMFRS budget in the short term, with GMFRS having a share of any collection fund deficits and implications around calculating tax base.

## Firefighter pay

Following the FBU ballot’s rejection of the 5% pay offer, notice of ballot for strike action has been sent to FRS employers. A formal dispute is now open. The postal ballot for strike action opened on 5/12/22 and closes on 30/01/23. On 6 December, over 2,000 firefighters and control staff from across the UK assembled in Westminster to protest low pay. The FBU has not submitted a counteroffer but are referencing inflation as being 11.1%.

Matt Wrack (FBU General Secretary) said *“firefighters’ and control staff’s living standards are in peril. We have firefighters using foodbanks…Firefighters and control staff worked throughout the pandemic and firefighters took on extra duties... They have now been given a below-inflation pay offer. It is utterly disgraceful to call people key workers and then treat them like this.”*

GMFRS is currently implementing business continuity arrangements using resilience crews to ensure fire cover is provided during industrial action. The advert for crews remains open. The first course completed in November, and plans are in place to run a second course in January 2023.

CFO Dave Russel has updated staff several times throughout the process. In his [latest communication](http://insidegmca.gmfs.local/key-info/gmfrs/corporate/firefighter-pay-offer-2022-cfo-updates/cfo-update-december-5-2022/) (5/12) he set out his key principles:

* “Firefighters deserve a fair and meaningful pay award which properly reflects the important and complex work you do.
* Current and future pay awards must be fully funded.
* Pay awards must not only keep pace with inflation, but enable pay to catch up, given how pay has fallen behind in real terms since 2010.
* A fundamental review is required of the way in which pay and reward work in our sector.
* The recruitment of resilience fire crews is in no way intended to undermine efforts to secure an improved pay offer for firefighters.
* I will approach any period of industrial action with two clear aims - To maintain the positive culture and working relationships which we have worked so hard to secure within the Service in recent times; To provide the best service I can to the people of Greater Manchester during any period of industrial action.
* This is a national issue not a local one and we will continue to work in a way which is respectful of all staff and the GMFBU.”

If a national strike were to take place, it would be the first national strike since pension action between 2013 and 2015, and the first on pay since 2002-2003. The potential impact of industrial action is well understood and includes:

* A likely increase in the risk to our communities during periods of strike action. This will be exacerbated by the cost of living crisis and the potential increase in fires this will cause.
* A potential negative impact on the culture of the Service and the significant progress made.
* A potential negative impact on relations between employers and staff.
* A potential negative impact on firefighters’ mental health and wellbeing.
* A negative economic impact on the Service due to its statutory duty to provide alternative fire cover during periods of industrial action.
* A short-term negative impact on firefighters’ pay during strike action, exacerbated by the current cost of living crisis.
* A potential ongoing negative impact on fire cover if overtime bans are instigated.
* A potential negative impact on “wider work” undertaken if this is deemed not within statutory role maps and functions.
* Potentially long-term and protracted industrial action if the Government decide to review a firefighter’s right to strike.

## Evidence-based Fire funding

Before the CV-19 pandemic, national government was reviewing how it funds FRS. As part of its review, the Government was looking to change the fire funding formula. The formula currently has a greater negative impact on Metropolitan / urban FRSs such as GMFRS.

Fire funding is currently calculated on risk rather than demand, so that when a large incident happens FRS have the resources to tackle it. There is a possibility that Government will place more emphasis on demand rather than risk and cite falling incidents as justification for further cuts. However, incidents such as wide-scale flooding, terror attacks and large-scale fires, demonstrate that FRS need to maintain sufficient resources to respond effectively and keep people safe. It will be important to adopt an evidence-based approach to justify the call for funding to risk rather than demand. Incidents such the Cube fire and the moorland fires are good examples, but it will be helpful to analyse other large incidents in this way to identify the impact on available resources. It will be important to continue to drive down false alarms.

The Government [continues to report](https://www.gov.uk/government/statistics/detailed-analysis-of-fires-attended-by-fire-and-rescue-services-england-april-2021-to-march-2022/detailed-analysis-of-fires-attended-by-fire-and-rescue-services-england-april-2021-to-march-2022) on false alarms. Last year, *“of all incidents attended by FRSs, fires accounted for 26 per cent, fire false alarms 40 per cent and non-fire incidents 34 per cent compared with fires accounting for 37 per cent.”* [According to IFSEC Global](https://www.ifsecglobal.com/fire-news/false-alarms-make-up-98-of-automatic-fire-alarm-confirmed-incidents-in-2020-21/), false alarms made up 98% of automatic fire alarm confirmed incidents in 2020/21. It is essential we continue to drive down false alarms to ensure we have the right number of resources available for real incidents and to avoid false alarms becoming a narrative to justify funding cuts.

### NFCC Tool - Economic and Social Value of the UK FRS

The NFCC has [helped develop a tool](https://www.ukfrs.com/economic-and-social-value-uk-frs-phase-i-based-english-data-only) that will allow FRS to evaluate and understand the benefit and the financial impact of their response, prevention and protection activities. This will support FRS in their community risk management planning and help to inform their resource allocation. This kind of evaluation will become increasingly important as the Government requires an evidence-based approach to justifying grants and funding, particularly if they are looking to reduce public sector spending.

## Supply chains

The financial impacts of Brexit are still becoming apparent. In the short to medium term, the reduction in EU workers is impacting certain sectors, including the number of lorry drivers. The lack of drivers is impacting the availability of a range of goods and the pool of people qualified to drive fire appliances. A lack of availability, coupled with potential wage rises, is seeing an increase in the price of some goods and / or delays in receiving certain goods.

Supply chains and the increased cost of items has been exacerbated by both the war in Ukraine and the steep rise in energy prices. If the pound continues to fall in value these costs will increase further.

## Firefighter pension detriment

The situation has not changed recently. The Government has strongly warned FRS not to try and resolve the issue until they have found an agreed solution and provided guidance. This is not expected until Autumn 2023.

With affected firefighters currently unsure whether they can afford to retire or not, there is a risk that over the next 12 months GMFRS will be over-establishment. There is also a risk that when the situation has been resolved there will be a large number of retirements at one time, meaning that GMFRS could then be under-establishment.

GMFRS cannot resolve the issue locally until Government guidance has been produced. Clearly this provides little solace to those firefighters caught in the middle of the delay and their wellbeing should be a priority.

# Sociocultural

## Cost of living crisis and fire risk

The World Energy Council has warned that the failure to protect those in fuel poverty could see a “cost of living crisis move to a cost of lives crisis” in areas of high deprivation and social exclusion.

On October 17, Jeremy Hunt announced that support for energy bills will now no longer last for two years, but will be reviewed in April. After this it is likely to be targeted at the most vulnerable. This will mean the majority of the population will have to absorb the full financial impact of the increase in energy prices.

The LFB issued an urgent safety warning for vigilance to safeguard “The Left Behind” in the Energy Crisis. Following a recent fire in London, fire investigators determined the cause was an open fire being used instead of gas central heating.

The fuel poverty charity, National Energy Action, describes fire incidents arising from improvised heating by open fires as a “harsh and dangerous reality of the cost-of-living crisis” - *“…millions are facing impossible choices because of their high energy bills. Some are choosing between heating and eating, others are self-disconnecting from energy suppliers completely and some are even starting open fires. These aren’t coping strategies. It’s people who feel they have no safe choice to make.”*

The fire risks posed by the cost of living crisis fall into the following categories:

* Off-peak use of white goods whilst residents are asleep making it harder to escape if there is a fire.
* DIY heat and cooking sources such as open fires and BBQs.
* Portable heaters and carbon monoxide risk.
* Gas and electricity meter tampering and the increased fire risk this causes.
* The increase in single-room isolation and the associated fire risks.

These risks will potentially be exacerbated if firefighter industrial action takes place during the cold weather.

Please see Appendix B for more information on these risks and the role of FRS.

## COVID-19 (CV-19)

The long-term effectiveness of vaccinations against CV-19 and other viruses is not yet known. It is possible that immunity to the virus will decrease over time, potentially resulting in more severe illnesses.

[Air pollution is linked to far higher CV-19 death rates](https://www.theguardian.com/environment/2020/apr/07/air-pollution-linked-to-far-higher-covid-19-death-rates-study-finds): Study shows that even a tiny, single-unit increase in particle pollution levels in the years before the pandemic is associated with a 15% increase in the death rate. The research, done in the US, calculates that slightly cleaner air in Manhattan in the past could have saved hundreds of lives. GM has some of the most polluted roads in the UK. This places further moral pressure on us to reduce our own emissions. With the current suspension of the Clean Air Zone in GM, the city region’s high levels of air pollution will continue to put our communities at risk should CV-19 infections increase again.

* [More here.](https://theconversation.com/air-pollution-exposure-linked-to-higher-covid-19-cases-and-deaths-new-study-141620?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20July%2014%202020%20-%201677316169&utm_content=Latest%20from%20The%20Conversation%20for%20July%2014%202020%20-%201677316169+CID_cbb0e8b4cdb529b5c48a58ad90d2c086&utm_source=campaign_monitor_uk&utm_term=Air%20pollution%20exposure%20linked%20to%20higher%20COVID-19%20cases%20and%20deaths%20%20new%20study)

A study in the [Journal of Exposure Science and Environmental Epidemiology](https://airqualitynews.com/2021/07/19/wildfire-smoke-linked-to-17-increase-in-covid-cases/) found that wildfire smoke is linked to a 17% increase in CV-19 cases. There is more on wildfires and air pollution in the Environment section.

CV-19 has been proven to increase the vulnerabilities that lead to increased risk of fire. These include:

* Unemployment / reduced employment.
* Loneliness and worsening mental health.
* Increase in alcohol / drug use.
* Impaired health including long-term fatigue.

As well as the increased risk of dying from CV-19, the social and economic impacts of the pandemic have been felt most acutely amongst already deprived communities.

GMFRS will have to take these factors into account when identifying and mitigating the levels of risk in our communities, tailoring prevention initiatives accordingly. The causes of fatal fires are now well-known. For more information, see Appendix C which considers recent research conducted by BRE and the Scottish FRS.

### Long term fatigue

Overwhelming fatigue, palpitations, muscle aches, pins and needles and many more symptoms are being reported as long-term after-effects of the virus.

According to data, [released by the Office for National Statistics (ONS](https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/6october2022)), more than 1 million people in the UK have long Covid at least one year after they were first infected. An estimated 2.3 million people in the UK were experiencing self-reported long COVID (symptoms continuing for more than four weeks after the first confirmed or suspected CV-19 infection).

[According to the head of the World Health Organization](https://www.theguardian.com/society/2022/oct/12/long-covid-who-tedros-adhanom-ghebreyesus), long Covid is “devastating” the lives and livelihoods of tens of millions of people, and wreaking havoc on health systems and economies. He has urged countries to launch “immediate” and “sustained” efforts to tackle the “very serious” crisis. The WHO estimates that 10% to 20% of survivors have been left with mid- and long-term symptoms such as fatigue, breathlessness and cognitive dysfunction. Women are more likely to suffer from the condition. This may have long-term implications on absence and availability.

GMFRS will have to manage this in terms of both Service resilience and the protection of the wellbeing and health of our staff.

### Impact on young people

According to research undertaken by [charity UK Youth](https://www.ukyouth.org/wp-content/uploads/2021/01/UK-Youth-Covid-19-Impact-Report-.pdf), CV-19 has negatively impacted a number of young people in the following ways:

* Increased mental health or wellbeing concerns.
* Increased loneliness and isolation.
* Lack of safe space – including not being able to access their youth club / service and lack of safe spaces at home.
* Challenging family relationships.
* Lack of trusted relationships or someone to turn to.
* Increased social media or online pressure.
* Higher risk for engaging in gangs, substance misuse, carrying weapons or other harmful practices.
* Higher risk of sexual exploitation or grooming.

The [Government’s own research](https://www.gov.uk/government/publications/covid-19-mental-health-and-wellbeing-surveillance-report/7-children-and-young-people) corroborated the findings regarding the impact on young people’s mental health. The report goes on to say that the impact is increased for children and young people with special educational needs (and disability) and / or from disadvantaged backgrounds.

The Government’s analysis also showed that the education of children and young people from disadvantaged backgrounds suffered more during lockdown - *“children in the most disadvantaged group were less likely to have access to a computer during periods of lockdown. In the early stages of the pandemic, mental health symptoms were found to have increased more in children who did not have access to a computer for home schooling during school closures compared to children who did have access to a computer. Similarly, children on pupil premium were less likely to have a quiet place to study and not having this space was linked to lower outcomes in wellbeing.”*

The impact of lockdown on young people’s physical fitness has also been reported.

*“While those strongly agreeing they had the opportunity to be active fell from the start of the pandemic, the most recent set of restrictions and national lockdown across November 2020 to February 2021 led to an even greater decrease...However, restrictions easing was coupled with a bounce back in people feeling they had the opportunity to be active, and while levels remain below pre-pandemic (2019), there have been no further drops since May 2021.”* [Sport England](https://sportengland-production-files.s3.eu-west-2.amazonaws.com/s3fs-public/2022-04/Active%20Lives%20Adult%20Survey%20November%2020-21%20Report.pdf?VersionId=nPU_v3jFjwG8o_xnv62FcKOdEiVmRWCb), April 2022.

[According to Lee Heard](https://www.itv.com/news/2021-06-18/why-more-people-are-drowning-because-of-the-pandemic-and-how-you-can-stay-safe-in-open-water) (director at the Royal Life Saving Society) by June 2021, 8 million swimming classes had been cancelled because of lockdowns - *“Access to swimming lessons and pools is potentially a social issue, so people from low economic backgrounds are potentially the hardest hit. That gap has possibly widened because of Covid, so we’ve got a real concern about getting people back into the pool.”* With less young people being able to swim the risks of drowning in the region increases both in the short and medium term.

The impact of CV-19 on young people has particular implications for GMFRS youth engagement programmes and prevention work, prioritising certain issues:

* Safeguarding and recognising the signs of vulnerability.
* Mental health support.
* Providing physical fitness programmes.
* Providing programmes that improve young people’s learning and qualifications.
* Providing programmes that help reduce criminal activity.
* Campaigning around drowning prevention and the prioritisation of the planned Greater Manchester Strategic Water Safety Partnership and strategy.

## Diversity in Fire

The lack of firefighter diversity has been the focus of attention from Government and others for several years. As recently as September 2022, [a House of Commons research paper](https://commonslibrary.parliament.uk/research-briefings/sn01156/) singled out FRS as being particularly poorly represented.

In June 2018, during the [Grenfell Inquiry](https://www.theguardian.com/uk-news/2018/jun/07/grenfell-firefighters-deny-response-was-affected-by-racism), Imran Khan QC said: *“The use of … stereotypes, including in one instance referring to someone as ‘foreign’, in the statement of the firefighters on the face of it suggests unconscious or some conscious racism. We simply ask the obvious question: did it have any impact on the way individuals were treated that night?”* Martin Seward, counsel for the FBU said “that suggestion is offensive, it is wrong and it is unconstructive”.

HMICFRS has repeatedly criticised fire services for their lack of representation (see State of Fire report, above.)

In March 2017, the LGA published [Inclusivity and the fire service](https://www.local.gov.uk/inclusive-service-twenty-first-century-fire-and-rescue-service) - a report that sets out the changes in the role of a firefighter, outlines activities that are underway in FRA and suggests further areas of work to develop the recruitment and retention of a more diverse firefighter workforce. In March 2018, the LGA published[inclusivity case studies](https://www.local.gov.uk/inclusive-fire-service-recruitment-and-inclusion), identifying different FRS’s approaches to recruitment and inclusion.

There is specific reference to diversity in the Framework including the requirement of the People Strategy to identify how an FRA intends to continuously improve the diversity of the workforce to ensure it represents the community it serves.

[NFCC publishes Equality, Diversity and Inclusion Strategy](https://www.nationalfirechiefs.org.uk/news/nfcc-publish-equality-diversity-and-inclusion-strategy-/252608): The vision of the strategy and plan is to support FRS in their work towards inclusive workplaces and services by assuring diversity and inclusion is designed into everything they do, whether that is service delivery, people development or future innovation.

[The Catalyst Programme](https://www.fire-magazine.com/the-national-leadership-centre-launches-a-new-programme-for-senior-leaders-with-a-disability): The National Leadership Centre launched a new programme for senior leaders with a disability. The new scheme will bring senior leaders with a disability together from across the public sector, with the aim of developing them to CEO level in their respective fields.

It is important that diversity is considered holistically. It is just not just for moral and ethical reasons but also for reasons of effectiveness. If a fire service is to fully understand and mitigate all the threats its communities face, it must understand and engage with all its communities. This is most effectively achieved by a workforce that represents all the communities it serves and successfully attracts and retains the best candidates from all its communities.

## Health

[The Marmot Review 2020](https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on): report was produced by the Institute of Health Equity and commissioned by the Health Foundation to mark 10 years on from the study *Fair Society, Healthy Lives* (The Marmot Review). The report highlights that:

* People can expect to spend more of their lives in poor health.
* Improvements to life expectancy have stalled, and declined for the poorest 10% of women.
* The health gap has grown between wealthy and deprived areas.
* Place matters – living in a deprived area of the North East is worse for your health than living in a similarly deprived area in London, to the extent that life expectancy is nearly five years less.

The role of the fire service in improving health should continue to be explored. GM is the most devolved region in England and any barriers regarding capacity, role map, skill set and motivation should not be allowed to entirely close the debate that Fire can be a health asset. There are a number of underlying and common risk factors for fire and poor health:

* Substance misuse
* Smoking materials
* Living alone
* In receipt of social services/ agency support
* Physical disability/lack of mobility
* Mental Health
* Prescribed medication
* Cold homes.

The 670,000 home visits carried out by FRS in England and targeted at vulnerable people continue to provide an opportunity to deliver proactive support that delivers improved integrated care.

### Ageing population and workforce

The aging population will affect UK finances for a range of reasons, not least pensions, which will have a knock on effect as to finances available for FRS. FRS will also need to monitor and consider at what age people are deemed to be “high risk” from a preventative point of view. Maintaining a constantly updated understanding of ageing dispersal across GM is a necessity for understanding geographic risk levels and deploying prevention and response resources.

Over the next 10-20 yrs, the wider workforce will become, on average, older. While demographic change in the population as a whole will lead to an ageing population in general, the impact on the workforce will be even more marked due to the removal of the default retirement age and changes in pension provision that are likely to mean people will either retire later or feel that they are unable to retire at all.

The retirement age for firefighters is now 60. Evidence suggests that ageing can potentially bring with it declines in aerobic and cardiovascular fitness, musculoskeletal strength, cognitive functioning (e.g. reaction times) and sensory acuity (e.g. sight and hearing). At GMFRS, the highest number of both incidents and total shifts lost to sickness amongst uniformed staff is usually caused by musculo-skeletal problems. It will become increasingly critical for both GMFRS and individuals within the service to mitigate the risks associated with aging. GMFRS will have an increasing responsibility to consider the impact of aging on working patterns and the use of kit and equipment. The Bury Training Site and community resilience initiatives offer the opportunity to retain the experience of older firefighters in a safer environment, whilst helping to plug the future experience gap created by the previous recruitment freeze and future recruitment freezes.

As people age, there may be changes to what they most value about work, from wanting to achieve promotion or pay the mortgage, to valuing the social support and structure provided by the workplace. GMFRS may have to consider reviewing the structure in place at fire stations, perhaps creating mentoring / training roles for older firefighters and limiting the number of incident types they attend.

Regarding the wider implications of an aging workforce, GMFRS will have an increasing responsibility to manage the implications of an age diverse workforce; and any perception / evidence that less retirements result in less promotion opportunities for younger employees.

The [ONS reports](https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing/articles/livinglongerhowourpopulationischangingandwhyitmatters/2019-03-15) that as the UK population gets older, an increasing number of workers are providing care towards the end of their working life for family members. One in four older female workers, and one in eight older male workers, have caring responsibilities.

The report goes on to say that people are increasingly likely to have a living parent and / or a grandchild. Unpaid informal care provided by friends and family is essential to our society and the economy. Nearly three in five carers in England and Wales are aged 50 years and over, and one in five people aged 50 to 69 years are informal carers – this is the most common age group for having caring responsibilities.

As our population ages, there will be increased need for informal care, but there is also a need for older people to stay in the workforce longer. People will need to ensure they have adequate funds to support their longer lives. There is also a policy drive to increase employment among older people, to help support the increased costs of providing health and social care services and State Pension provision that an ageing population brings.

Overall, parents are the most common recipient of care by those of older working ages (29% of informal carers provide care to parents). People caring for parents are more likely to be in work than people caring for any other type of person. Almost two-thirds (64%) of people caring for parents are in work. This is an important finding, because the need for parental care among older workers is likely to increase in the future as the population ages. People in their 50s and 60s will be increasingly likely to have living parents who may develop care needs.

As with the changes to our staff’s health, changes to our staff’s responsibilities and priorities will also have to be taken into account in the consideration of work / life balance; wellbeing; flexibility etc.

### Firefighter cancer risk

In June 2022, occupational exposure as a firefighter was [classified as carcinogenic](https://www.uclan.ac.uk/news/firefighting-shown-to-be-carcinogenic) to humans by IARC, the leading global cancer authority.

UCLan’s Professor of Fire Chemistry and Toxicity Anna Stec, a member of the IARC committee, said: *“our research found that firefighters are frequently exposed to carcinogens that can have a serious impact on their health. In addition to fires and smoke, we have found high levels of cancer-causing substances (carcinogens) in fire engines, fire stations and PPE. In response, we developed our* [*Firefighters Cancer and Disease Registry*](https://www.uclan.ac.uk/research/activity/fcdr) *and Best Practice Report which are already in use in four countries, including the UK. Following this guidance, we hope that steps will be taken to keep firefighters safe and reduce the occurrence of cancer and other diseases within this lifesaving profession. MPs must call for an urgent debate on firefighters’ health and cancer so that we can appropriately support those who work to save our lives.”*

[Research published by UCLan](https://www.fbu.org.uk/publications/minimising-firefighters-exposure-toxic-fire-effluents) and the FBU concludes that skin absorption, rather than inhalation, is firefighters’ leading cause of exposure to cancerous gases created during a fire, known as polycyclic aromatic hydrocarbons (PAHs). UCLan researchers discovered that the methods used to clean firefighters’ protective clothing and equipment are not effectively implemented. This causes the protective gear to be contaminated for its next use, and means the length of time that skin is exposed to fire toxins is increased. The research from 2020 concluded that the risk of developing cancer in UK firefighters caused by skin absorption of toxic chemicals is as high as 350 times above the level that would action immediate government intervention in the US.

The [FBU launched](https://www.fbu.org.uk/campaigns/decon-fire-contaminants) DECON training, which encourages firefighters to take actions before, during, and after every fire incident to help reduce their own, their co-workers’ and their families’ exposure to these toxic substances, which are termed ‘contaminants’. At its annual conference in May 2022, the FBU agreed to expand its work on the effects of fire contaminants.

### Firefighter mental health

[Mental health and wellbeing of emergency responders](https://www.nationalfirechiefs.org.uk/news/new-report-on-mental-health-and-wellbeing-of-emergency-responders/257884): a report by King’s College London and The Open University in 2020 identified a need to better understand several areas of wellbeing in those who respond to emergencies, such as self-harm, suicide, alcohol and substance misuse, sleep, bullying, financial concerns and the positive outcomes of working in this sector. This should continue to be a priority for GMFRS.

## London Fire Brigade – Culture Review

[Full Review here](https://www.london-fire.gov.uk/media/7211/independent-culture-review-of-lfb-report953f61809024e20c7505a869af1f416c56530867cb99fb946ac81475cfd8cb38.pdf)

The recommendations and outcomes consider five key areas:

1. Creating a workplace where everyone is afforded dignity
2. Better engagement with London communities
3. Building a leadership model of trust
4. Improved wellbeing
5. Transforming HR services

**Summary of recommendations and outcomes**

* Zero tolerance policy RE bullying, racist, misogynistic behaviour.
* Anonymised reporting process for bullying, racist, misogynistic behaviour complaints – current process “Safe to Speak” not working.
* Historic review of bullying, racist, misogynistic behaviour complaints over last 5 years to determine whether further action is required.
* Develop brigade values with staff that are “public first” – these values will underpin all further corporate processes.
* Develop a culture dashboard for each station and team to proactively address problem areas, as well as robust data tools to measure culture.
* Consider body worn cameras for home safety visits.
* Ensure secure female facilities at stations.
* Improve community relationships and include them in the development of local plans.
* Recruit firefighters who reflect their communities.
* Create named family liaison officers to support people post-incident.
* Geographically integrate senior leaders with staff.
* Appoint independent chair and members to senior selection panels and include a declaration of interests.
* Take a preventative approach to addressing mental health including understanding signs of mental health issues; investigating root causes; training managers to provide early intervention and support; and understanding and proactively supporting every firefighter who has been exposed to an incident that might impact their mental health.
* Understand the reasons for suicide with clear reporting, and design interventions to address it; and provide support to staff who have been affected.
* Review HR services.
* Create an HR data analysis strategy and use data analysis to inform strategies and policies.
* Create a workforce planning strategy to understand the lack of diversity and improve it, including fast track development programmes for underrepresented groups.
* Understand and address why BAME staff are more likely to raise a grievance and more likely to be subject to disciplinary proceedings.

# Technology

## Zero-emission fire engines

Zero emission battery electric fire tenders – in combination with hydrogen fuel cells and a minimum of 8kg of onboard hydrogen fuel storage – will meet current requirements for flexibility, emergency response and the water pumping requirements. This is the conclusion of research by ULEMCo, the hydrogen fuel company who partnered with Oxfordshire FRS in a new study.

Analysis of the energy requirements of fire appliances, including the requirement in EN1486 for four hours water pumping energy, confirmed that 8kg of hydrogen with a Toyota Gen2 fuel cell range extender would be sufficient to provide range extension of a 220kW battery designed base vehicle. The combination of stored energy in the batteries and hydrogen fuel which can be refuelled rapidly, are needed to ensure the “always ready”, rapid response requirements of a fire appliance.

A second conclusion from the work is that this onboard energy strategy incorporating hydrogen fuel could be met within the existing vehicle design, with no compromise to the equipment installation, and therefore would speed up the potential deployment of zero emission vehicles in these types of application.

As part of the project, the existing fire station locations in Oxfordshire were assessed, and options proposed for hydrogen refuelling locations that would allow the engines to refuel cost effectively, and provide facility for the rest of the Oxfordshire public sector fleet.  The key was finding locations where consolidated demand would be over 200kg a day, so that hydrogen infrastructure investors would be able to supply hydrogen at a price/kg similar to existing fuels and ownership cost models.

* [More here](https://www.fire-magazine.com/hydrogen-fuel-in-conjunction-with-battery-energy-storage-could-result-in-zero-emission-fire-engine)

## Firefighting helmets

Pioneering new helmet technology that could help firefighters quickly map their surroundings, navigate hazardous environments and efficiently locate fire-scene victims is being developed by researchers at the [National Robotarium.](https://www.hw.ac.uk/news/articles/2022/national-robotarium-teams-up-with-scottish.htm)

Combining feeds from thermal cameras, radar and inertial sensors mounted on a standard-issue firefighting helmet, the technology uses artificial intelligence to provide wearers with real-time information that can help detect victims, recognise teammates, and provide an accurate understanding of their own location.

Developmental field trials of the new technology have been conducted in partnership with Scottish FRS personnel. It is hoped the technology could support firefighters and scene commanders to more safely navigate adverse or low-visibility conditions such as smoke-filled fire scenes and reduce the time it takes to rescue victims.

Dr Chris Lu, Lecturer in Cyber-Physical Systems in the School of Informatics at the University of Edinburgh who is leading the project, said: *“Firefighters often operate in environments with very low or no visibility due to the vast amount of smoke released from a fire. This can make detecting the location of potential victims and whereabouts of firefighters very challenging in situations that are often extremely time-sensitive. This new technology has the potential to support on-the-ground firefighters and scene commanders to make crucial in-the-moment decisions that can enhance search rescue efficiency, ensure safer collaboration between teammates and, most importantly, improve outcomes for potential victims of fire scenes. Our entire sensor rig weighs less than a kilogram and is composed of affordable, off-the-shelf components that can be easily retrofitted to existing standard-issue firefighting helmets. This means it has the potential to be an incredibly efficient and accessible resource to fire and rescue teams…Our next ambition is to give the helmet the ability to generate 3D maps and an embedded display, which will provide the wearer with even more spatial awareness.”*

A similar product is [the Qwake helmet](https://www.qwake.tech/) that allows firefighters to “see through” smoke. Qwake helmet uses thermal imaging and real-time augmented reality projected onto the visor of the helmet to make navigation in extreme environments quicker and safer. An article from 2021, looks at its [use by Californian firefighters](https://www.euronews.com/next/2021/06/24/california-firefighters-are-turning-to-augmented-reality-to-combat-blazes).

## E-scooters, lithium batteries, and fire risk

There are increasing concerns over lithium battery fires from items such as e-scooters. With an estimated 200,000 scooters already in use in the UK and the number rapidly increasing, the risk of further fire related incidents also escalates.

While lithium-ion batteries are used for a wide variety of everyday products such as smartphones, larger units that require regular charging and are stored in homes and flats come with a corresponding fire safety concern.

While there is limited data relating to the number of fires, the NFCC has highlighted that reported fires caused by e-bikes and e-scooters rose from eight in 2019, to 24 in 2020 and 59 by December 2021 – just in London alone.

In late September, Bristol City Council reported that a [fatal fire at a flat in Twinnell House](https://www.fia.uk.com/news/homemade-electric-bicycle-believed-to-be-cause-of-fatal-flat-fire.html) was started by an electric bike. Residents had expressed concerns about ‘homemade versions’ of e-bikes with cheaper versions of lithium-ion batteries being stored in the building. Meanwhile, Hammersmith and Fulham Council has recently called for a ban on “dangerous” e-bike chargers due to the fire risk they present, with Councillor Frances Umeh arguing that many of those sold online do not meet the UK’s minimum safety requirements. In June, a large blaze at a high-rise in Shepherd’s Bush was found to be caused by the failure of an e-bike lithium-ion battery. The incident was attended by 60 firefighters and was followed by a [safety warning from LFB.](https://www.fia.uk.com/news/lfb-issues-safety-warning-regarding-the-shepherds-bush-high-rise-flat-fire.html)

Privately owned e-bikes have been banned for safety reasons on London’s tubes and busses by Transport for London since December 2021, following incidents of e-bikes catching fire.

Technical Director of Electrical Safety First, Martyn Allen, said: *“By the very nature of the batteries these dangerous charging devices are powering, it is a potential disaster waiting to happen. The process of charging e-bike batteries must be done with compatible and compliant chargers.”*

Lithium-ion batteries are volatile under stress, making them a fire risk. The failure of a Lithium battery is usually due to a short circuit or damage from overcharging, overheating, penetration or crushing. Warning signs that a battery pack or cell is likely to fail include the battery appearing to bulge or swell, sometimes accompanied by other signs such as discharging too fast and/or the battery being hot to the touch. Once a battery fails or ‘runs away’ the cells usually start to give off smoke. Thermal runaway is the chemical process within the battery which produces heat and flammable toxic chemical gases very quickly, often before any flame appears. These gases include Carbon Monoxide, Carbon Dioxide, Hydrogen Fluoride, Hydrogen Chloride, Sulphur Dioxide and Hydrocarbons such as Ethane, Methane, Butane and Hydrogen Cyanide.

A lithium-based battery burns extremely hot (between 700◦c and 1000◦c) so the temperatures involved, and the sparks generated cause a fire, fuelled by the vented gases as the battery cells decompose further, resulting in rapid fire spread. This process happens far more quickly than other types of fire. The reactions, once started, increase so speedily that the cells typically appear to ‘explode.’ Due to the self-sustaining process of thermal runaway, Lithium battery fires are also difficult to quell. Bigger batteries such as those used in Electric Vehicles can reignite hours or even days after the event, even after having been cooled.

Education and awareness are crucial for the fire and building safety industry, as well as for the wider public. It needs to be understood that they do hold a fire risk, due to the energy they hold. The use of lithium-ion batteries is set to increase.

* [More here](https://www.ifsecglobal.com/fire-news/awareness-fire-risks-lithium-ion-batteries-grows-amid-calls-for-bans-on-charging-infrastructure-and-e-bikes-scooters/) and [here, including prevention advice](https://www.ifsecglobal.com/fire-news/are-e-scooters-and-similar-devices-the-new-major-fire-risk/)

## Robotics

The NY Fire Department is using robot dogs created by Boston Dynamics to support search and rescue missions. The robot dogs, known as Spot, will be controlled by a human operator and will be able to collect images and data during precarious search and rescue missions, and measure the concentration of dangerous gases.

The robots will only collect data on hazardous materials situations, according to officials. However, Albert Fox Cahn, a lawyer based at the NYU School of Law, has expressed concerns on how the robots could collect and use data in the future. He said: *“If it actually is used in ways that keeps firefighters safe, that would be great. But the history has always been that even if it's first brought in for a compelling case, you get this creep where it's used for more and more scenarios until it's reaching areas where it just doesn't feel justifiable.”*

In April last year, Boston Dynamics was forced to terminate its contract with the NYPD amid concerns about the privacy of the robot dogs, and fears they were 'unsettling'. On its website, Boston Dynamics claims *“Spot is not designed to conduct mass surveillance…The robot has been used to help humans remotely evaluate potentially dangerous situations that include explosives or other environments where the risk to human health and safety is high.”*

* [More on Spot here](https://www.bostondynamics.com/products/spot)

## Unmanned aircraft (UAVs) to be used for wildfire detection

Swarms of advanced UAVs are set to carry out aerial surveys of Antarctica – gathering crucial data on changes to the region’s environment and wildlife – as part of new research with engineers from the University of Sheffield. The aircraft will also be tested in the UK to help detect wildfires. This will build on previous research with Lancashire FRS that used unmanned aircraft to detect wildfires as early as possible to limit their devastating impact.

* [More here](https://www.sheffield.ac.uk/news/swarms-advanced-uavs-collect-key-environment-data)

## The Internet of Things (IoT)

According to Statista there were 13.8 billion IoT connected devices globally in 2021 and by 2025 that figure is set to soar to 30.9 billion units.

Despite understandable concerns over cyber security and resilience, technology such as IoT is playing an increasing role in fire safety. By connecting devices, or things, to the internet it is possible to monitor their performance remotely, detect when they are going wrong, or even carry out necessary adjustments without requiring human intervention.

Rolling out the technology is not without risks, especially in the fire safety sector. For example, there is the potential risk that IoT sensors monitoring fire safety equipment could develop a fault with potentially fatal consequences, or that it could be attacked by hackers in much the same way as critical national infrastructure has found itself under attack in recent years.

Despite concerns, there remains considerable interest in IoT technology within the fire safety sector. In a 2021 Fire Industry Association (FIA) report on IoT, based on a survey carried among hundreds of European companies, all participants (100%) said that IoT will play a key role in the future of the industry. Indeed, nearly half of organisations (47%) surveyed are already working on an IoT project and just under two fifths (39%) are planning to do so in the future.

The FIA has established an IoT Forum. Comprising several organisations, including the BSI, BRE (Building Research Establishment), Euralarm and the NFCC (National Fire Chief’s Council), the forum now has 80 members. The Forum has set up several task groups to tackle long term standards and regulatory issues, as well as creating best practice guidance for its members.

Post Grenfell, there has been a major emphasis on the ‘golden thread’ of compliance. Tio Fire Safety has introduced a digital fire logbook that enables all this information to be saved digitally in the cloud which multiple users can then contribute to. It is also looking at ways in which IoT sensors fitted in devices could eventually send that data directly from devices to the digital fire logbook. However not every fire-safety product can or should be digitised. For example, there are many more fire doors than there are fire alarm systems.

The technology could be utilised by the fire service to provide data to support home fire safety visits. Sensors in people’s homes could transmit live data regarding temperature and movement. This could be used to identify cold homes, the beginning of a fire in someone’s home, a prolonged period without movement in a home suggesting an occupant has fallen or is incapacitated. At incidents sensors could monitor water for chemical levels and predict where flooding is likely to happen next.

* [Article on the potential uses of the technology](https://www.ifsecglobal.com/fire-protection/fire-safety-for-disabled-residents-using-technology-to-manage-fire-safety-risks/) to support disabled people in social housing.

# Legal

## Manchester Arena Attack

On Thursday 3rd November 2022 at 2.30pm, the Manchester Arena Inquiry will publish Volume Two of its report detailing the Chairman’s findings and recommendations on the emergency response to the attack.

The report will consider the evidence heard by the Chairman during the oral hearings on the preparedness of each emergency service to respond to a marauding terrorist firearms attack and the events on 22nd May 2017 after the explosion, in particular the emergency response and the experience of each deceased person.

This report will have numerous findings and recommendations for GMFRS and other emergency services. The report will generate extensive media and political scrutiny and a number of detailed workstreams to ensure recommendations are effectively implemented. GMFRS has undertaken significant work on its terrorist response capability including the implementation of a new MTA response model and the subsequent removal of the HMICFRS cause of concern. GMFRS’s response to the Arena attack was widely reported at the time and since. This is likely to be reported again following the publication of Volume 2. It is also likely that the media will have an even greater interest in GMP’s response on the night as these issues have not yet been fully reported by the press.

## Serious Violence Duty

The introduction of a new [Serious Violence Duty 2022](https://www.gov.uk/government/consultations/serious-violence-duty) requires local authorities, the police, FRA, specified criminal justice agencies and health authorities to work together to formulate an evidence based analysis of the problems associated with serious violence in a local area, and then produce and implement a strategy detailing how they will respond to those particular issues. Serious Violence can include ASB, Anti-social Fires, and Arson.

The governance arrangements and the existing frameworks in place in GM provide a pathway for GMFRS to work with GMP, the Violence Reduction Unit, and local authorities to effectively deliver this duty.

To help with the new duty, the [NFCC has published a Framework](https://www.nationalfirechiefs.org.uk/write/MediaUploads/Miscellaneous/0_-_NFCC_Early_Intervention_Implementation_Framework.pdf) that supports FRSs to intervene early and develop resilience in Children and Young People, “supporting them to cope with life’s challenges before they become involved in a crisis situation.” – *“The framework includes a suite of practical tools for strategic direction, implementation, monitoring and evaluation and a new strategic Theory of Change which sets out a national core approach for interventions.”*

## Built Environment

The Building Safety Act 2022 is designed to deliver protections for qualifying leaseholders from the costs associated with remediating historical building safety defects, and provide a toolkit of measures that will allow those responsible for building safety defects to be held to account. The focus is on high-rise residential buildings, hospitals and care homes that are at least 18m, or seven storeys, high, and contain at least two residential units. It overhauls existing regulations and makes clear how residential buildings should be constructed, maintained and made safe.

The Act creates three new bodies to provide oversight of the new regime: the Building Safety Regulator, the National Regulator of Construction Products and the New Homes Ombudsman.

The aim is for owners to manage their buildings better, and give the home-building industry the framework it needs to deliver more, and better, high-quality homes.

Many of the detailed provisions in the Act will be implemented over the next two years through a programme of secondary legislation. Hundreds of clauses in the Act still require clarification. Details of the Act’s transition into practice and estimated timescales [can be found here.](https://www.ifsecglobal.com/fire-news/building-safety-bill/)

The Building Safety Regulator (BSR) within the HSE will oversee the safety and performance of all buildings, as well as having a special focus on high-rise buildings. It will promote competence and organisational capability within the sector including for building control professionals and tradespeople.

The National Construction Products Regulator (NRCP) will oversee a more effective construction products regulatory regime and lead and co-ordinate market surveillance and enforcement in this sector across the UK. The NRCP has already started taking enforcement action under the scope of existing regulations. The new regulatory regime will start to apply once the necessary secondary legislation on the future regulatory regime has been approved by Parliament.

The New Homes Ombudsman Scheme (NHOS) will allow relevant owners of new-build homes to escalate complaints to an NHO. Developers of new-build homes will be required by secondary legislation to become and remain a member of the NHOS and secondary legislation will also set out the enforcement framework and sanctions for breaching requirements. The Secretary of State may also approve or issue a developers’ code of practice which sets out the standards of conduct and the standards of quality of work expected of the NHOS’s members.

**Protecting leaseholders**

Building owners will not legally be able to charge qualifying leaseholders for any costs in circumstances where a building (in the majority of cases meaning those over five storeys or eleven metres tall) requires cladding to be removed or remediated. Qualifying leaseholders will also have protections from the costs associated with non-cladding defects, including interim measures like waking watches.

Residents in high-rise buildings will have more say in how their building is kept safe and will be able to raise building safety concerns directly to the owners and managers of their buildings known as accountable persons and responsible for repairing the common parts of a higher-risk building, as defined in section 72 of the Act. The accountable person(s) will have a duty to listen to them. If residents feel their concerns are being ignored, they can raise them with the BSR. All homeowners will also have more than twice the amount of time, from 6 to 15 years, to claim compensation for sub-standard construction work.

The adverse mental health impact of the building safety crisis on leaseholders has been widely reported including groundbreaking research by GMFRS. A report on its impact by the UK Collaborative Centre for Housing Evidence, which includes GM data, [can be found here.](https://housingevidence.ac.uk/publications/living-through-the-building-safety-crisis/)

The Government’s decision not to introduce the Grenfell Inquiry’s recommendations around Personal Emergency Evacuation Plans was met with objection from both [residents](https://www.ifsecglobal.com/fire-features/lack-of-government-commitment-to-peeps-in-high-rise-residential-blocks-is-a-kick-in-the-teeth-for-disabled-people/) and [the FBU](https://www.fia.uk.com/news/fire-brigades-union-slams-government-rejection-of-key-grenfell-tower-inquiry-recommendations-on-peeps.html).

**What the Act means for building owners**

Dutyholders such as the Principal Designer and Principal Contractor under the Act will be required to manage building safety risks, with clear lines of responsibility during the design, construction and completion of all buildings.

Accountable persons will need to demonstrate that they have effective, proportionate measures in place to manage building safety risks in the higher-risk buildings for which they are responsible. Those who do not meet their obligations may face criminal charges. The Building Safety Act is also clear that building owners and landlords will need to contribute to the costs of fixing their own buildings.

**What the Act means for the built environment industry**

The Act will create a framework for the design, construction, and management of safer, high-quality homes in the years to come. It will strengthen the construction products regulatory regime, with new requirements to make sure all construction products on the UK market are safe for their intended use, with a NRCP to monitor and enforce this.

There will be a new developer tax, and a levy on developers will ensure that industry contribute to setting things right. New rights to redress will ensure those responsible for contributing to the building safety crisis are in line for costs to rectify their mistakes.

**Ambiguity**

[According to RIBA](https://www.ribaj.com/intelligence/building-safety-act-2022-what-you-need-to-know), the Act introduces no changes to Approved Document B: Fire Safety of the Building Regulations meaning there is still some ambiguity on compliance. Revisions to guidance may gain more momentum when the HSE is embedded as Building Safety Regulator. In August 2022, [the Government published answers](https://www.gov.uk/guidance/approved-document-b-fire-safety-frequently-asked-questions?utm_medium=email&utm_campaign=govuk-notifications-topic&utm_source=6d6c3074-1c60-4624-a573-abd1fed226de&utm_content=daily) to some of the most FAQs regarding ADB.

The London Plan’s Fire Safety Guidance goes beyond the requirements in the Building Safety Act. The detailed document [can be viewed here.](https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance/fire-safety-lpg)

### Building Safety Act – Implications for GMFRS

* Fire Safety Order will continue to apply but we will also regulate under the new regime.
* Increased time commitment at consultation stage (Gateway 2), and a new time commitment for occupation stage (Gateway 3). Impact assessments indicate additional 35 WM hours for Gateway 2 per building and 10 additional WM hours for Gateway 3.
* Participation in ‘Safety Case’ Reviews. This is likely to require 35 hours of work per building.
* HSE plans to utilise ‘multi-disciplinary teams’ but it is not yet fully clear what this will look like or the resources it will require from us.
* HSE has the statutory power to request assistance and can “direct” an FRA to provide assistance.
* Statutory duty to ensure that any staff providing assistance are competent.
* Secretary of State may pay the FRA for providing assistance on request or Direction.
* There is still a lack of clarity regarding PEEPs – this has risk implications around responsibility for evacuating people from buildings, with particular risk for disabled people and those less able to evacuate.
* The Act will undoubtedly have a significant impact on GMFRS resources, but there is currently a lack of clarity and guidance from the Government and the HSE identifying what the scale of this will look like. It will include time spent delivering the new regime; new recruitment; new training requirements; new policy development; and the requirement for new ICT systems.
* We need to recruit and upskill staff to meet the changes. This will be against a background of national demand with every FRS looking to take on new staff as well as the HSE and potentially industry looking for additional staff. HSE and industry may be able to pay staff more, making it even more difficult. At the same time, GMFRS will still need enough staff to dedicate to its existing Protection functions.

## Fire safety for schools

[Recent fire safety guidance for schools](https://www.nationalfirechiefs.org.uk/news/new-fire-safety-guidance-a-retrograde-step-for-schools/272947) is a retrograde step according to the NFCC. – *“this new guidance falls well short of that and will only require sprinklers in schools over 11m. The original guidance, when first released in 2007, acknowledged the important role of sprinklers and stated that “all new schools should have fire sprinklers installed except in a few low-risk schools. In addition to falling short on sprinklers, this new guidance still allows for the use of combustible materials on external walls.”*

* [The FIA are equally concerned](https://www.ifsecglobal.com/fire-news/the-loss-of-a-school-can-be-avoided-with-a-sprinkler-system-jonathan-oneill-responds-to-new-proposals-for-schools/), as are [Zurich Insurance](https://www.fire-magazine.com/leading-insurer-slams-dfe-over-new-school-fire-safety-plans).

## Place For Everyone

The GM [Places for Everyone](https://www.greatermanchester-ca.gov.uk/what-we-do/planning-and-housing/places-for-everyone/) spatial strategy seeks to deliver sustainable, inclusive growth. It has four key spatial elements:

* Significant growth in jobs and housing – continuing development in that part of the ‘core growth area’ encompassing the city centre and beyond to the Etihad in the east, through to the Quays, Trafford Park and Port Salford in the west. The majority of commercial employment growth is proposed in this area.
* Inner Area Regeneration of those parts of Manchester, Salford and Trafford surrounding the Core Growth Area. Together with the Core Growth Area, around 50% of overall housing supply is found here.
* Boosting the competitiveness of the northern districts – addressing the disparities by the provision of significant new employment opportunities and supporting infrastructure and a commitment that collectively the northern districts meet their own local housing need.
* Sustaining the competitiveness of the southern districts – supporting key economic drivers, for example around Wythenshawe hospital and the Airport and realising the opportunities offered by national infrastructure investment, e.g. HS2, whilst recognising the important green infrastructure assets in the area.

A key objective of the Places for Everyone Plan is to meet our housing need – using the Government’s standard methodology this equates to almost 165,000 homes over the plan period (2021-2037). Development is directed to the most sustainable areas – primarily the city and town centres – and enable most efficient use of our brownfield land supply. The plan sets out an ambition for the boroughs to enable delivery of their share of GM’s 50,000 additional affordable homes over the plan period.

A large number of transport projects are identified for delivery in the next five years, including Metrolink capacity improvements through the introduction of 27 new trams; better rail infrastructure including on the Castlefield corridor, Transpennine Route Upgrade to Leeds and ‘Access for All’ station improvements; bus network and town centre improvements; new walking and cycling infrastructure across all ten districts; expanding the city-region’s electric vehicle charging network; and development

of the Clean Air Plan, which is currently under review.

Stockport is the only district to withdraw from the agreement, so it will be important to monitor changing risk in Stockport separately. Stockport plans to build 18,600 homes between 2023-38. Development is already underway in the town centre through the [Stockport MDC](https://www.stockportmdc.co.uk/). It includes a new transport interchange; new office and retail space; some 1,200 new homes including affordable housing; more green space.

# Environment

## Climate emergency

The impact of the climate emergency on FRS is now well-documented – hotter summers are creating more fires and large-scale wildfires; wetter winters are creating more flooding and increasing road traffic collisions. The heatwave in July 2022, led to London [firefighters’ busiest day](https://www.fia.uk.com/news/heatwave-led-to-london-firefighters-busiest-day-since-second-world-war.html) since WW2, attending more than 1,110 incidents. At one stage the brigade was attending 15 large scale incidents simultaneously, some requiring between 10 and 30 fire appliances. Across the rest of the UK, 14 FRS declared major incidents on July 19th.

* LFB declared a major incident following a wildfire in Wennington, with more than 100 firefighters in attendance.
* In Buckinghamshire, 100 homes were left without power and gas. Properties were evacuated and dozens of fire crews attended.
* 15 fire engines and firefighters from across Nottinghamshire and Derbyshire attended a fire at a Nottingham farm.
* 1,000 homes across south Norfolk had their power cut after an electrical pylon caught fire.
* A major incident in North Yorkshire was declared, following a major fire
* Leicestershire FRS declared a major incident due to wildfires in the area.
* Norfolk saw a range of incidents including field fires and a fire at a costal park, which led to a major incident being called.
* Buckinghamshire, North Yorkshire, Nottinghamshire, Humberside, London, Cheshire, Leicestershire, Bedford, Hertfordshire, Norfolk, Suffolk, Cambridge, Lincolnshire, and South Yorkshire all declared major incidents.

**Further reading**

[LGA report provides](https://www.local.gov.uk/climate-emergency-fire-and-rescue-services) a basis for having local conversations about adaptation and mitigation, as well as providing comments and case studies from a range of organisations and programmes working on the issue. Includes extensive case study on the GMCA / GMFRS approach.

In August 2020, Greater Manchester was selected by the government to help kick-start nature recovery on a countrywide scale. The pilots will enable local authorities to set out their local priorities for restoring and linking up habitats so species can thrive, and agree the best places to help nature recover, plant trees, restore peatland, mitigate flood and fire risk, and create green spaces for local people to enjoy. GMCA is piloting and developing a [Local Nature Recovery Strategy](https://democracy.greatermanchester-ca.gov.uk/documents/s15769/ITEM%2010%20Annex%20B%20Local%20Nature%20Recovery%20Strategy.pdf) (LNRS), these will become mandatory and a statutory document under the Environment Act and will identify priority actions for biodiversity and nature recovery across GM.

### Wildfires

[According to the NFCC](https://www.nationalfirechiefs.org.uk/News/fire-services-deal-with-unprecedented-number-of-incidents-during-the-heatwave) there were 442 wildfires in England and Wales by Summer 2022, compared with 247 in 2021.

In 2021, [the New Scientist reported that](https://www.newscientist.com/article/2272127-wildfires-could-become-a-big-threat-in-the-uk-due-to-climate-change/) wildfires could become a big threat in the UK due to the climate emergency. Climate change is projected to drive a very large increase in fire danger across the whole of the UK, leading researchers to warn that planning rules may need to block the building of new homes in fire-prone areas.

* [Once-in-a-century weather](https://www.theguardian.com/environment/2021/mar/24/rising-risk-of-wildfires-across-uk-from-climate-crisis-scientists-warn) extremes could become commonplace by 2080 unless carbon emissions are curbed. [Research available here](https://theconversation.com/wildfires-we-calculated-how-climate-change-will-increase-danger-in-the-uk-157665?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20March%2025%202021%20-%201898818554&utm_content=Latest%20from%20The%20Conversation%20for%20March%2025%202021%20-%201898818554+CID_e1a32f3d52471200de2400923e91d4e2&utm_source=campaign_monitor_uk&utm_term=Wildfires%20we%20calculated%20how%20climate%20change%20will%20increase%20danger%20in%20the%20UK)

Warmer summer temperatures and associated drier conditions desiccate plant materials and create more vegetation litter, [providing more fuel for wildfires](https://theconversation.com/how-climate-change-is-increasing-the-risk-of-wildfires-99056?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20June%2029%202018%20-%20105259306&utm_content=Latest%20from%20The%20Conversation%20for%20June%2029%202018%20-%20105259306+CID_91f18e37811293ec4f65062fedfea082&utm_source=campaign_monitor_uk&utm_term=How%20climate%20change%20is%20increasing%20the%20risk%20of%20wildfires). It has also been demonstrated that increases in rainfall during winter and spring – known consequences of climate change – provide more favourable conditions for plant growth and therefore more potential fuel for the fires later in the summer.

[How wildfires affect climate change](https://theconversation.com/how-wildfires-affect-climate-change-and-vice-versa-158688) and vice versa. As a driver of climate change, wildfires release huge quantities of greenhouse gases to the atmosphere. In British Columbia, extreme fire years in 2017 and 2018 each produced three times more greenhouse gases than all other sectors of the province combined. While trees can and do regrow after fire, building back carbon takes time, which is what we lack in the fight against climate change. Most forests are carbon sinks, meaning they take up more carbon than they release, with the amount of carbon taken up varying with age. As plants photosynthesize, they take carbon dioxide out of the atmosphere and integrate it into their leaves, roots and biomass. Over time, this leads to large carbon stocks in forests, stored in vegetation and importantly, soils, including peat.

The effect of wildfires on GM and GMFRS are now well-known and include a negative impact on fire cover; the economy; flood risk; habitats; wildlife; air quality and more. For more detail on this, please see Appendix D.

### Flooding

Hannah Cloke, professor of hydrology at the University of Reading has said: *“As well as extreme hot temperatures, the stand-out weather events in 2019 were the many different types of floods, causing millions of pounds worth of damage and causing misery to many people. The picture that emerges is of the multiple flooding threats that are facing the UK, many of which are exacerbated by climate change.”* She cited as examples summer flash floods caused by extreme downpours, extensive autumn and winter river floods caused by persistent heavy rain and storms, and a backdrop of continued sea-level rises heightening the risk of coastal floods.

[Future floods will delay](https://www.bbc.co.uk/news/science-environment-52710224?utm_campaign=Carbon%20Brief%20Daily%20Briefing&utm_medium=email&utm_source=Revue%20newsletter) emergency response. [Researchers say](https://www.nature.com/articles/s41893-020-0516-7.epdf?sharing_token=gRmGtLYMMLTWeqWPt_hymdRgN0jAjWel9jnR3ZoTv0OlT_PaFsvuQnEtq5FGJEC-V15eWf-I2yhRn-3qACnKbjeIKBSnX5X9gDYHVm50wTSMvuYzoPByQDII5JduZYUqwXxYoc0Ma8Eq5_T_10NHLSo0zrMIFgC_yEVVNuS2ykk_rCIqLZTTMnIuuOsrR8MSDv5U-CrQGdlCTpBuhnPK37mKZmNs-bXmOFsNgSG-VPSM8Udem7U-8Q_FaoUfK5pwS1yYpmR-4Lsot-uDGmxA3cx90EDGYbop04fgOfl7sHi9t3oOPV1OLmUPiyd7Slo5B4OApSP8JaVaa6yjCosfNAXhEkNPv1Duhg4KDzYNmwl1Pz1_faxis6y3QLx1IGhYLIvA20E6IkzFQZ9eJc4DpQ%3D%3D&tracking_referrer=www.bbc.co.uk) that flood conditions could see just 9% of some rural populations reached by an ambulance within the 7-15 minute mandatory timeframe. Older people living in rural areas would be worst affected, the authors say.

[Flooding and health](https://www.gov.uk/guidance/flooding-and-health-national-study?utm_source=8f349d2b-4a8a-461e-9f32-43b1bd1069df&utm_medium=email&utm_campaign=govuk-notifications&utm_content=immediate): Public Health England undertook a study to understand the impact of flooding on health and wellbeing. Key findings include a very significant impact of on mental health; the increase in mental health problems persists for 3 years; persistent flood-related damage to homes is associated with worse mental health outcomes; evacuation and displacement, particularly without warning, increases the risk of anxiety and post-traumatic stress disorder; losing access to health and social care services increases the risk of depression and anxiety among people who require those services.

## Net Zero, communities and the role of FRS

In October 2021, the Government published its [Net Zero Strategy](https://www.gov.uk/government/news/uks-path-to-net-zero-set-out-in-landmark-strategy). The strategy sets out how the UK will deliver on its commitment to reach net zero emissions by 2050. It *“outlines measures to transition to a green and sustainable future, helping businesses and consumers to move to clean power, supporting hundreds of thousands of well-paid jobs and leveraging up to £90 billion of private investment by 2030.”* It also aims to reduce Britain’s reliance on imported fossil fuels.

As part of the strategy, new investment announced includes:

* An extra £350m to support the electrification of UK vehicles and their supply chains and another £620m for targeted electric vehicle grants and infrastructure, particularly local on-street residential charge points, with plans to put thousands more zero emission cars and vans onto UK roads through a zero-emission vehicle mandate
* £140m Industrial and Hydrogen Revenue Support scheme to accelerate industrial carbon capture and hydrogen, bridging the gap between industrial energy costs from gas and hydrogen and helping green hydrogen projects get off the ground. There are two carbon capture clusters including the [Hynet Cluster](https://hynet.co.uk/) in North West England.
* £3.9 billion of new funding for decarbonising heat and buildings, including the new £450m 3-year Boiler Upgrade Scheme, so homes and buildings are warmer, cheaper to heat and cleaner to run
* £124m boost to our Nature for Climate Fund helping us towards meeting our commitments to restore approximately 280,000 hectares of peat in England by 2050 and treble woodland creation in England to meet our commitments to create at least 30,000 hectares of woodland per year across the UK by the end of this parliament.

In October 2022, [The Conversation](https://theconversation.com/to-address-climate-change-lifestyles-must-change-but-the-governments-reluctance-to-help-is-holding-us-back-190300) reported that without changes to people’s behaviour and lifestyles, it will be impossible for the UK to reach net zero emissions by 2050. The Lords’ Environment and Climate Change Committee [reported that](https://committees.parliament.uk/committee/515/environment-and-climate-change-committee/publications/) the Government is reluctant to communicate to the public the scale of social change needed to create a low-carbon society.

There is an opportunity for GMFRS to fill this space, campaigning through the lens of the increase in flooding and wildfires as a result of the climate emergency. There is a pressing case to include this campaigning as part of our wider Prevention strategy. For instance, Tim Green, a firefighter for Kent FRS and the FBU’s south-east regional chair, wrote [this piece](https://www.theguardian.com/commentisfree/2022/jul/22/wildfires-fire-service-climate-crisis-staff-cut) in the Guardian in July 2022. Whilst it is written through the lens of funding cuts, it demonstrates the potential scope for presenting the voice of frontline firefighters in relation to the climate emergency and the impact on their work. Firefighters are trusted in communities and the FRS brand is strong. There is an opportunity to use this influence to affect behaviour change in hard to reach groups.

## Air Pollution

More than one in 19 deaths in UK’s largest towns and cities linked to exposure to toxic air. Although Manchester is below the city average, [the 2020 report by Centre for Cities](https://www.centreforcities.org/publication/cities-outlook-2020/) still estimates that 4.3% of deaths are directly linked to air pollution. The only other GM city measured is Wigan, which is very slightly lower at c.4.1%.

As well increasing mortality rates, air pollution is also believed to [negatively impact on intelligence](https://www.theguardian.com/environment/2018/aug/27/air-pollution-causes-huge-reduction-in-intelligence-study-reveals?utm_source=esp&utm_medium=Email&utm_campaign=Guardian+Today+-+Collection&utm_term=284323&subid=2568579&CMP=GT_collection) and [increase crime levels](https://theconversation.com/air-pollution-increases-crime-in-cities-heres-how-95975?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20May%208%202018%20-%20101248874&utm_content=Latest%20from%20The%20Conversation%20for%20May%208%202018%20-%20101248874+CID_1846209826622eb60363a10fdc793aaf&utm_source=campaign_monitor_uk&utm_term=Air%20pollution%20increases%20crime%20in%20cities%20%20heres%20how).

Evidence suggests that poor air quality, including wildfire smoke, increases the risks from CV-19. Please see Sociocultural section above.

[Air pollution in Greater Manchester:](https://www.ippr.org/research/publications/atmosphere) 2018 report by think-tank IPPR North and King’s College London estimates, *“1.6 million life years will be lost in GM in the coming century due to its poisonous air. This is equivalent to each of us having our life expectancy reduced by six months. Using the 2011 baseline, NO2 pollution alone was estimated to have caused up to 1,781 premature deaths in GM and particulate matter pollution up to 1,906 premature deaths.”*

[On Air Quality](https://www.policy.manchester.ac.uk/publications/on-air-quality/?utm_source=P%40M%20Newsletter&gator_td=Dkk%2bYEpVzAne4W71Cs3CXqmObl9yI%2b9olZkb8A7Kg0fvAX7RfFXYy%2b5zXStahWIVL70LZXY0aGyJU4z176DrSY%2bDpettZBejG%2fBtz5Tk4vEsS8Pfopa4wpLmsV2crKqrPo1twyQblhzP3hJbFiluOvFwBkfeYZcNdqBB28oViBA%3d): Manchester University publication provides analysis on how to tackle air pollution. In 2019, 2.31 million global deaths could be attributed to household, or indoor air pollution. For England alone, this figure is around 64,000 deaths, with disadvantaged communities disproportionately impacted. The articles in On Air Quality explore how air pollution affects public health, economic outcomes and acts to widen existing inequalities; they also provide recommendations for policymakers on how these impacts can be addressed.

The current pausing of GM’s Clean Air Zone proposals will increase the pressure on the region’s public services to reduce pollutant emissions, and deliver ways of improving air quality.

# Appendix A: State of Fire Report 2021 – quotes and key messages

**FBU:** “The influence of the FBU is considerable in some services. Sometimes, it goes too far and is contrary to services’ values and behaviours, and to the public interest.”

**Pay and conditions**: “The outdated and ineffective structures for negotiating pay, terms and conditions are where reform is most needed.”

**The NJC**: “I have previously recommended that **the NJC be abolished** and subsumed into the independent pay review body that already covers police officers.”

**Industrial action:** “In the interests of public safety, I urge policy-makers, legislators, employers and the wider fire sector to take steps to consider what useful improvement could be made to current terms and conditions and pay negotiation machinery. This work should include a consideration of **the removal of the right of firefighters to strike**.”

**MTA:** “How services establish the necessary capability to respond to marauding terrorist attacks (MTAs) is another example of industrial relations impeding the ability of services to serve the public. As I have publicly set out this year, it is of course extremely important that every fire and rescue service has the capacity and capability of dealing with an MTA. **Training for an MTA as well as attendance at and the performance of fire and rescue functions in respect of an MTA, are squarely within the established role of a firefighter. However, the FBU’s position on the matter has led services to consider paying twice for that essential service** – a service the public both needs and properly expects – out of fear the FBU will direct firefighters to withdraw this capability.”

**CFO independence:** “Deployment decisions and operational preparedness, such as the location of fire engines and the duty systems worked by firefighters, get tangled in protracted local, regional and national differences to the detriment of the public interest.”

**Pay:** “The current pay structure does not give experienced firefighters a sufficient financial incentive to stay in their roles; to get higher pay, they need promotion to command or management responsibilities. This fails to provide a fair reflection of their levels of experience. Unlike the police, who receive progression pay each year, firefighters only move between two levels for most roles: from trainee to competent. They usually move on from the trainee stage within 18 months, which means that most firefighters see minimal pay progression beyond this, irrespective of additional skills and contributions. This places firefighters at a disadvantage.”

**Inconsistent funding and governance arrangements**: “…we continued to find short-term funding arrangements for services, which makes it difficult for them to plan ahead and to invest to make efficiencies. These include the one-year government funding settlements…The Government should review the way services are funded to address this problem.”

**Many services aren’t giving prevention work sufficient priority**: “These services also needed to do more to improve how they established who was at greatest risk of fire and other emergencies. They also needed to prioritise prevention work and make sure that they were meeting the needs of those who were most vulnerable. All these services also needed to improve how they evaluated which interventions were most effective at helping those in need.”

* Levels of prevention activity are declining, and targeting is poor
* Evaluation remains a weakness for the sector

**More needs to be done to make sure workforces are productive**

**All services collaborate with local organisations and authorities to some extent, but evaluation is limited:** “Collaboration isn’t only about making savings or efficiencies. Avon FRS works with the South Western Ambulance Service NHS Foundation Trust and has provided a **community first-responder vehicle** at one of its fire stations. The service is also helping the trust by driving ambulances to incidents. Cornwall FRS has worked with the other two emergency services to set up the new role of a **tri-service safety officer**. Staff in this position carry out a range of activities to support the fire, police and ambulance services. The new role has led to savings being made and safety benefits for the community.”

“Too many services don’t consistently or effectively evaluate, review or monitor collaboration activities to assess the extent to which they work well and are cost-effective.”

**Workforces don’t always represent the communities they serve:** “The workforces of all services remain woefully unrepresentative of many of the communities that they serve, and services should do more to recruit people from diverse backgrounds.”

**Not enough is being done to plan for future leaders:** “It is crucial that succession planning for leaders includes the need to consider a diverse range of individuals… not enough was being done to attract people from outside the sector… Services should also develop their staff and provide consistent and fair opportunities as part of their workforce succession planning.”

**References to GMFRS (see also MTA above):**

* “Greater Manchester [has] addressed the areas for improvement we gave them relating to **safeguarding**.”
* “Greater Manchester…provided evidence of strong **EDI planning**.”
* **Workforce and succession planning**: “only a third [have] adequate processes in place” [this includes GMFRS]

# Appendix B: The cost of living crisis and fire risk

The gravity of the UK Energy Crisis can be measured by increasing demands on food banks over the past three months, which have seen a 30% rise according to leading UK charities and, particularly, a change in the nature of need with appeals by food bank users for food that requires no energy to cook, known as “cold parcels”.

**Off-peak use of white goods**

Cost-saving electricity usage in off-peak night time hours can save money, but it may lead to the running of high-energy white goods such as tumble dryers and washing machines whilst occupants sleep; a practice that could leave sleepers less time to respond quickly and safely in the event of fire.

**DIY heat sources**

Improvised drying of washing is identified as a particular hazard. Clearly there is a public safety risk if fireguards are not in place.

According to the latest 2022 Home Office crime statistics, electricity theft – ‘hotwiring’ or tampering with a line or bypassing a meter – has risen by a record-breaking 13% compared with the previous year. Energy regulator Ofgem warns that the offence of “interfering with electricity meters or wires is a serious risk to safety”. Illegal tampering to bypass meters could result in overheating of wires, property damage and loss of life.

Seeking makeshift substitutes for powering lighting or cooking in the home is similarly fraught with dangers that actively hasten fire-raising incidents. The increasing use of candles or paraffin lamps indoors is now regularly reported in the national press, together with accounts of significant growth in sales of “survival packs” of camping gear such as portable gas stoves.

There is news of households using outdoor barbecue appliances instead of their kitchen ovens. Recently, a strengthening trend in wood-burning stoves has seen a 60% leap in sales of firewood. Such trends point to a worsening step in the heating of homes by householders unfamiliar with the hazards.

**Carbon monoxide and portable heaters**

The NFCC points out the particular public safety risk of temporary portable heaters and urges people to take fire safety precautions in the home to stay safe. Some kinds of heaters may also present a poisoning risk from “the Silent Killer”, CO (carbon monoxide). The use in households of CO alarms is strongly advised. *“Fires involving heaters have a particularly high mortality rate. This may be due to circumstances where bedding or blankets are too close to a heat source.”*

**Meter cheating**

Improvised heating is also an observably emergent criminal activity. Every year people are injured, some fatally, as a result of meter tampering. It’s estimated that more than £400 million worth of energy is stolen each year across the UK, a crime reckoned to add between £20 and £30 to bills.

The UKRPA (UK Revenue Protection Association) is committed to combating the tampering and illegal abstraction of electricity and gas. This year the UKRPA reported an increase in criminals selling meter tampering or meter removal as a service. For example, the electricity meter of an Essex pub was bypassed in 2018. A small child was fatally electrocuted from touching lighting in the garden, and both the electrician and landlord were prosecuted. Ofgem warns: *“Under no circumstances should consumers attempt to connect electricity meters themselves.”*

According to news reports, in many cases criminal gangs can carry out in excess of 15 “tapping-in” bypasses of domestic supplies each day. For instance, in one single terraced street of 20 houses, where a house was destroyed in a suspected gas explosion, investigators found five instances of gas theft and two of electricity theft.

The scale of the destruction meant the cause of the explosion could not be identified but this example demonstrates the wide prevalence of this life-threatening malpractice with, allegedly, UK homes in incalculable numbers avoiding paying for usage by bypassing their supply.

The two principal utilities, gas and electricity, are each individually sources of unique danger when subjected to tampering – but together they can combine in an explosive mixture with unforeseen fatal consequences. Leaking gas is highly flammable and can be easily ignited. A faulty electrical connection as the result of “hot-wiring” is all it would take to cause an explosion, risking terrible injuries. Meddling with exposed wiring can make switches or appliances “live” to touch or cause them to overheat or malfunction; the outcomes can be catastrophic.

**Dangers of single-room-isolation**

Crew Manager Graham Tuckwood from Nottingham FRS’s Persons At Risk Team, highlights isolation as a critical risk for vulnerable occupants living alone: *“As people may begin to shrink their environment to cope with fuel poverty, the risk is compounded. People can begin to live in one room, carrying out multi-functions that may make them vulnerable to fire. Old chimneys may be used without proper inspection, and more candles may be lit, both increasing the risk from carbon monoxide. We find that disorganised living, substance misuse and smoking also increase a person’s risk.”*

**Rethinking fire risk in an energy crisis and the role of fire risk assessors**

There are strong indications for fire risk assessors to regard themselves as a key participants in a wider support network composed of representatives from responsible authorities to develop community safety plans in consultation with partners for whom vulnerable and disadvantaged residents exposed to fire risk is an issue of the highest priority.

Information-sharing agreements with partner agencies can yield multi-agency psycho-socio-behavioural assessments that provide enhanced insights into occupants of high-risk environments.

The risk assessment framework developed by Nottinghamshire FRS (NFRS) for its PEO (Person-Environment-Occupation) model is an example. When assessing risk to occupants of a property, the PEO is a way of looking at all the information gathered about the person, environment, and occupation (occupants’ important and meaningful activities: washing and dressing, cooking, childcare, exercise, work, etc.).

The risk assessor then considers how the different areas intersect to understand the quality of the individual’s occupational performance, and their risk of fire.

**Multi-agency collaboration**

The “Fire Safe & Well” project of the LFB (in partnership with London’s NHS, Public Health England, and the capital’s Councils) can be seen as a PEO counterpart at scale. This “Healthy London Partnership” points the way to the future of enhanced home fire safety visits supported by a multi-agency transactional assessment for possible interventions.

This information is taken from an [article in IFSEC Global](https://www.ifsecglobal.com/fire-news/fuel-poverty-a-crisis-set-to-spark-fire-hazards/) and includes guidance on recognising the signs of meter tampering.

# Appendix C: Fire fatality research

[An investigation](https://www.bregroup.com/insights/research/the-causes-of-fire-fatalities-and-serious-fire-injuries-in-scotland-and-potential-solutions-to-reduce-them-phase-1-irs-review/) into the underlying conditions associated with fire deaths and serious fire injuries in domestic dwellings in Scotland, has been completed by BRE. By reviewing the data from 38 areas detailed in the Incident Recording System (IRS), key factors and common conditions were identified under which fatalities and serious injuries occur. This enabled a profile of a person involved in a typical fire fatality or serious injury to be formed, and the associated demographic profile and common background conditions to be identified. Factors such as living alone, being vulnerable or elderly, falling asleep or being asleep, having medical conditions, illnesses or temporary lack of physical mobility, or not hearing the alarm all contribute.

Fourteen recommendations have been made to address the highlighted fire safety issues and concerns that current technologies and approaches may not provide sufficient protection for vulnerable people. The recommendations are targeted at further developing existing technologies to safeguard vulnerable people, and reducing fire-related fatalities and serious injuries in the future. They include -

* Providing additional warnings from smoke alarms.
* Increasing the use of combined detection and suppression water mist systems.
* Developing video analytic techniques (this could be modified and used to provide warning when the smoke or flame from a fire is present in a home).
* Reviewing fires from electrical items and proposing ways to reduce their occurrence.
* Improving IRS.

The [second phase of the investigation](https://www.bregroup.com/insights/final-fire-fatalities-scotland/) made further recommendations for FRSs:

* During a Home Fire Safety Visit (HFSV) if smoke alarms are already present and locations likely to produce false alarms then consider re-locating them to a more appropriate location.
* There were lots of cases of people refusing HFSVs and the Scottish Fire and Rescue Service (SFRS) have no powers of entry for domestic premises. Some promotional material produced by SFRS (e.g. video interviews) and circulated on social networks, newspapers, magazines etc., explaining the benefits of HFSVs, may encourage such people to have a HFSV.
* When performing a HFSV of a domestic dwelling, SFRS should give advice on the benefits of smoke detection in caravan properties as well as domestic property and consider fitting smoke alarms in occupier’s caravans.
* To perform HFSV and install smoke alarms in all caravans in caravan parks.
* Produce leaflets promoting the likely consequences of not having a HFSV when there is a fire and leaflets for general fire safety.
* To reinforce the message to get out and stay out during a fire.
* To discuss escape plans, conduct fire drills and discuss good practice (such as not using high wattage bulbs in low wattage lamps) with occupants and perhaps neighbours.
* There have been cases when issues with keys have caused delays such as neighbours that have not had keys to enter the property when the smoke alarm sounded and when neighbours have had keys but the door is dead-locked or another key is present on the inside of the door. These types of issues could be highlighted during a HFSV.
* To encourage care providers / partners, family and friends to discourage hoarding and arrange a HFSV where excessive hoarding is observed.
* To consider the option of linking the alarm systems of vulnerable people directly with an Alarm Receiving Centre when they decline a HFSV of if they are high risk or remote.
* Vulnerable people identified as high risk or living in premises that are remote, could be informed of the benefits of having a remote monitoring system.

The report also made specific recommendations for fire investigators:

* Check and record how many smoke alarms were present, whether they were/are working as well as its status following the fire.
* Comment on ambient ventilation conditions at the time of fire.
* If a smoke alarm is suspected to be faulty then to record the manufacturer / model.
* If an electrical appliance is suspected to be faulty then to record the manufacturer / model.
* To always state in detail the position of every door contributing to the fire’s development.
* To report the manufacturer/models of smoke alarms that operated.
* When suspected faulty electrical items are suspected of causing fires then details of this information should be shared with SFRS and manufacturers.
* All witnesses should be asked, as standard, if a smoke alarm was heard to be sounding.

# Appendix D: The impact of moorland fires on Greater Manchester and GMFRS

**Moorland fires often tie up huge amounts of fire and rescue service resources for extended periods -** At the height of the region’s moorland fires in 2018, 57 fire engines and 220 firefighters were in operation across Greater Manchester. More recently, the fires near Oldham required GMFRS to commit 20% of its firefighter resources to the incident at one time. GMFRS has 50 fire engines available at any one time so the fires in 2018 required mutual aid support from 15 other fire and rescue services, some 100 soldiers, and the United Utilities helicopter. Peat fires burn underground making them very difficult and resource-intensive to tackle. GMFRS committed resources to the 2018 fires for almost three weeks before they were finally extinguished.

**Moorland fires are hugely disruptive to residents and the economy -** The 2018 fires spread across 11km², roughly twice the size of Manchester city centre, forcing the evacuation of 34 homes and the closure of four schools. The smoke cloud was visible on satellite images and depending on the prevailing winds, there was a danger of it affecting visibility as far away as the M60 and M62 motorways, and even flights in and out of Manchester Airport.

**Moorland and peatland fires have a hugely negative impact on the environment**

***Air pollution***: During the fires in 2018, the impact on air quality caused the closure of local schools. The impact on the air quality could be felt as far away as Manchester city centre and there were numerous reports of ash raining down in Chadderton and Mossley. [Research published in March 2020](https://iopscience.iop.org/article/10.1088/1748-9326/ab8496) found that the 2018 fires exposed 4.5 million people to fine particulate matter (PM2.5) levels above the daily World Health Organisation (WHO) guidelines. This significantly increased the number of excess deaths in the region. There is a growing body of evidence that air pollution has also significantly worsened the Covid-19 outbreak and has increased the number of deaths during the pandemic. There is more information in the Sociocultural section.

***C02 emissions:*** Peat on the moors and other peatlands constitute vital carbon sinks that need protecting to help reduce the amount of carbon dioxide in the atmosphere. Moorland and peatland fires not only release the carbon that has already been trapped in huge volumes, but also drastically reduce the amount of carbon the peat is able to capture in the future. There is more information on this above.

***Flooding***: The vegetation and the peat on the moorlands around GM absorb significant levels of rainfall, reducing the threat of flooding. The greater the amount of peat and vegetation destroyed in moorland fires, the greater the risk of subsequent flooding across the region.

***Natural habitats***: moorland fires have a significant and long-lasting negative impact on wildlife, habitats and biodiversity. [There are reports](https://www.lancashiretelegraph.co.uk/news/18532472.300-rare-birds-thousands-young-perished-darwen-moor-blaze/) that the fire on Darwen Moor in Lancashire may have destroyed more than 300 pairs of rare birds that were breeding on the site as well as thousands of young chicks. Alan Wright of The Wildlife Trust said: *“Moorland fires spread quickly and will take wildlife by surprise, destroying nests and killing chicks, and many of the insects they feed on. Many thousands of creatures will have died in [the Darwen Moor] fires.”* Lancashire FRS believes that the blaze was caused a barbecue.

***Air pollution:*** [wildfire smoke](https://airqualitynews.com/2021/03/08/wildfire-smoke-is-more-dangerous-than-car-exhaust/) is more dangerous than car exhaust. Particulate matter (PM2.5) from wildfire smoke can be several times more harmful to human respiratory health than PM2.5 from other sources, such as car exhaust, according to a new study. *“This study demonstrates that the harm due to wildfire smoke may be greater than previously thought, bolstering the argument for early wildfire detection systems and efforts to mitigate climate change.”*

[Dr Richard Payne of the University of York](https://www.theguardian.com/world/2018/jun/29/more-saddleworth-style-fires-likely-as-climate-changes-scientists-warn) said of the Saddleworth fire, *“devastating events like…Saddleworth Moor are likely to happen more often in the future”.* He also warned the fires would exacerbate climate change, as the UK’s peatlands store huge amounts of carbon that is then released. *“The UK’s peaty moorlands are crucial for the carbon they lock away as peat. Since the last ice age these peatlands have helped cool our climate but fires can reverse that effect, rapidly returning carbon to the atmosphere as CO².”*