


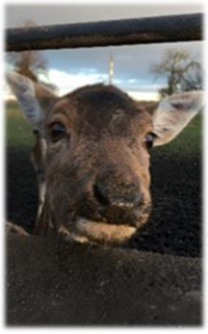


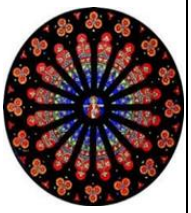


County Durham and Darlington
Fire and Rescue Service

County Durham and Darlington Fire and Rescue Service Community Risk Profile 2021/22 – 2023/24







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Contents

Foreword

Councillor John Robinson
Chair, Combined Fire Authority (CFA)

The Fire and Rescue National Framework for England requires that every fire and rescue authority must assess all foreseeable fire and rescue related risks that could affect their communities, whether they are local, cross-border, multiauthority and/or national in nature from fires to terrorist attacks. Regard must be given to Community Risk Registers produced by Local Resilience Forums and any other appropriate local risk analyses.

There are elements of national, regional and local risks throughout the Service area, with a broad range of consequences for the people who live, work and visit County Durham and Darlington. It is therefore essential that an effective methodology is used to assess the risks and inform the plans to mitigate them.

Stuart Errington
Chief Fire Officer (CFO)

As a fire and rescue service (FRS) we have had to adapt how we work to respond to the significant funding cuts during this period of austerity. It is essential that we understand both the people and the risks to enable us to respond to the challenges we face and that we continue to be flexible in the way we deliver our services to the communities; understanding risk and responding to the challenges we face is at the heart of this flexibility.

Where necessary, we will adjust our existing provision or build new capacity to ensure we have the right resources in place to provide the best possible services to our communities. As we strive to become more efficient and effective, we will examine opportunities for effective collaboration and partnership working, as some of the risks to our communities are complex and require mitigating action from a range of key stakeholders.

Although the future will undoubtedly be challenging, we are committed to the delivery of a professional, innovative and effective FRS, as we work towards our vision of ‘safest people, safest places’.

Introduction

Our vision is to have the Safest People in the Safest Places, and to help us achieve this goal it is essential that we understand both the demography of our communities and the risks to the people who live, work and visit County Durham and Darlington.

Our Community Risk Profile (CRP) draws on data and business intelligence from a range of sources, including the National and Community Risk Registers, information from our partners and our own operational incident data to create the risk profile. The CRP then informs our Community Risk Management Plan, our strategies and local station plans which describe how the range of prevention, protection and response activities are then used to reduce both the demand from fires and other incidents and the impact of risk on our firefighters and communities.

The position of the CRP within the Service risk management planning process is shown below:

[Relative position of our Community Risk Profile and how risk is reduced through the delivery of CDDFRS strategies]

The risk scenarios described within our CRP may apply to all members of our communities; those who live and work within County Durham and Darlington, those who visit and travel through the Service area, and depending on the nature of emergency incidents the risks are also exposed to our firefighters and other emergency responders.

About our area

The Service area covers the two Unitary Authorities of County Durham and Darlington and a geographic area of 939 miles^2 with a population of approximately 623,000 people. Within the Service area there are approximately 290,000 households and around 18,500 business premises. The area contains a cathedral City, a range of large and medium industrial towns, along with large rural areas and is categorised by the Department for Environment, Food & Rural Affairs (DEFRA) as being predominantly rural. Although there is approximately 91% of the population of the Service area that live within urban areas, 9% live in the widespread rural villages and hamlets.

The county has a mixture of mining, farming and heavy railway heritage, with the latter especially noteworthy in the southeast of the county, in Darlington and Shildon. In the centre of the city of Durham, Durham Castle and Cathedral are UNESCO designated World Heritage Sites and throughout the service area there are many Grade 1 and 2 listed buildings reflecting the areas rich cultural heritage where buildings have special architectural and historical interest.

The area has a good range of transport links, with the A1(M) and A19 motorways providing effective road transport and the East Coast Main Line enabling rail travel through the county. Teesside International Airport provides air travel to domestic and overseas destinations and the coastline to the east of the service area includes a harbour which receives a significant gross annual cargo.

Our rural communities cover a significant geographical proportion of the Service area, with some individuals being hard to reach by living in isolated areas which increases their risk of being vulnerable.

There are widespread and persistent health inequalities throughout the communities within the Service area, with levels of deprivation being significantly higher, and life expectancy lower, than national averages. Loneliness and isolation may also have a significant impact on both physical and mental health, and both the County Durham Joint Strategic Needs Assessment and Darlington Borough Profile describe that hoarding and excessive alcohol/substance misuse increase can have a negative impact on the wellbeing of individuals.

County Durham and Darlington Fire and Rescue Service (CDDFRS) delivers its core prevention, protection and response functions within the Service area from 15 strategically placed fire stations within two divisions, with 26 fire appliances during the day, and 24 through the night. The Service borders five other fire and rescue services (North Yorkshire, Cumbria, Northumberland, Tyne & Wear and Cleveland), providing mutual cross-border support to one another if, and when, required.

Demography

To enable a profile of the risks to the communities of County Durham and Darlington to be determined, it is essential that data and business intelligence from external sources is used in conjunction with internal data to provide a rich evidence base to support strategic decision making and organisational learning.

There are many socio-economic factors that create a unique profile for the communities of County Durham and Darlington. These include the populations of the City, towns, villages and hamlets within the Service area, their age and gender profiles, deprivation levels throughout communities, ethnicity, country of birth, religion, smoking prevalence and language proficiency.

A summary of these key demographic factors is described below:

Population

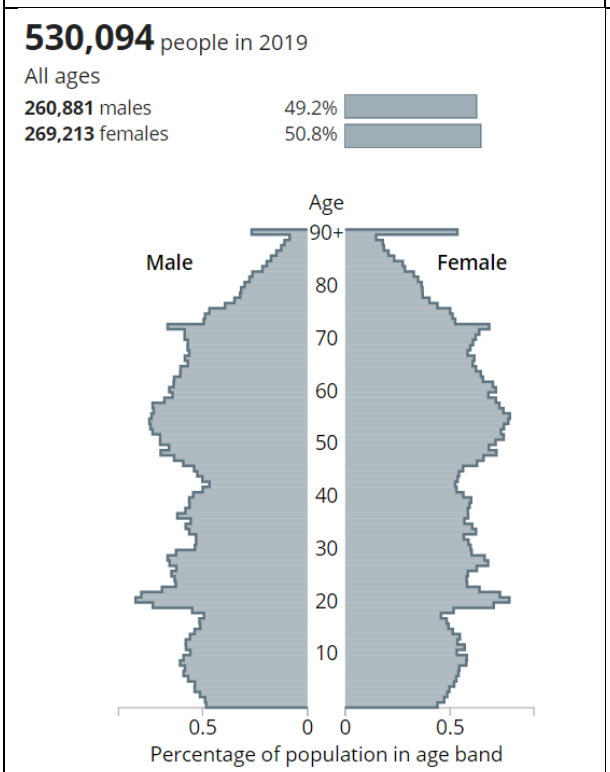
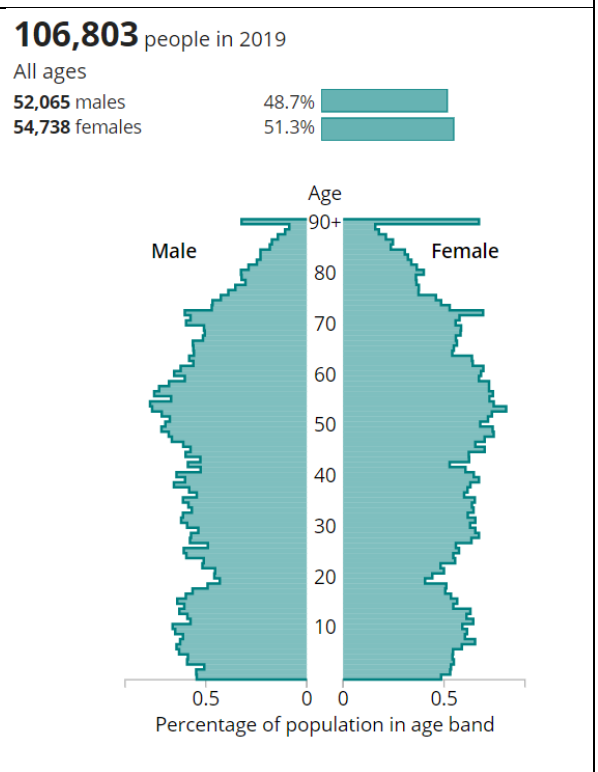
The Office of National Statistics provides key population information on the composition of the communities within County Durham and Darlington. The 2019 mid-year estimates for the population of County Durham and Darlington are shown below:

Unitary Authority	Male population	Female population	Population
County Durham	260,881	269,213	530,094
Darlington	52,065	54,738	106,803
Total	312,946	323,951	636,897

[County Durham and Darlington mid-year (2019) population. Source: Durham Insight and Darlington Borough Profile]

The Office of National statistics predict (2018 projections) that the county's population will continue to grow over the coming years, increasing by 3.7% by 2028 and by 6.6% overall by 2043 (source: Durham Insight).

The analysis of the percentage of the population within age bands from 0 to 90+ years for both County Durham and Darlington is shown below:

County Durham population pyramid	Darlington population pyramid
	

[County Durham and Darlington population pyramids. Source: Durham Insight]

Population density

Population density identifies the concentration of people living within a fixed area. With the area of County Durham at 2,226 km^2 and Darlington at 197 km^2, the increases in the corresponding population density since 2017 is shown below.

	Estimated population		People per square kilometre	
	County Durham	Darlington	County Durham	Darlington
Mid-2017	523,662	106,347	235	539
Mid-2018	526,980	106,566	237	540
Mid-2019	530,094	106,803	238	541

[Population of County Durham and Darlington. Source: Darlington Borough Profile]

To provide a greater understanding of the longer term direction of travel for the populations of both County Durham and Darlington, data from 2001 shows that the population of County Durham has increased by 36,416 (7.37%) since 2001 and

Darlington has increased by 8,909 (9.10%) in the same time period. These increases in population are therefore shown in the corresponding population density, with County Durham increasing by 16 people (17.2%) per square kilometre since 2001 and Darlington increasing by 45 people (9.07%) per square kilometre in the same time period.

Age

A useful summary measure of ageing is the assessment of the median age of the populations of both County Durham and Darlington.

	Unitary Authority	
Year	County Durham	Darlington
Mid-2017	43.5	42.9
Mid-2018	43.5	43.1
Mid-2019	43.4	43.2

[Median age of County Durham and Darlington. Source: Population estimates: median ages for administrative, electoral and census geographies]

To provide a greater understanding of the longer term direction of travel for the age of both County Durham and Darlington, data from 2001 shows that in mid-2019, the median age in County Durham was 43.4, an increase of 3.9 years since mid-2001, and Darlington was 43.2 years, an increase of 3.7 years since mid-2001. The increases in median age occur following a combination of significant changes to the frequency of births, deaths and net internal migration.

County Durham and Darlington age profile

Age group	County Durham	Darlington
15 and under	17.2%	18.9%
16-64	61.9%	60.6%
65 and over	20.8%	20.5%
85 and over	2.4%	2.7%
Median age	43.4	43.2
Old age dependency ratio per 1000 working age population	326	329

[Age profile for County Durham and Darlington Source: Durham Insight and Darlington Borough Profile]

The implication of Darlington's age profile is that the dependency ratio of children and older people to working age adults is already higher than the national average. According to the Office of National Statistics population projections, this is predicted

to get worse and at a faster rate than elsewhere. Without intervention, this is likely to translate into increasing pressures on public services and risk future economic growth.

Deprivation

Deprivation covers a broad range of issues and refers to unmet needs caused by a lack of resources of all kinds, not just financial. The Index of Multiple Deprivation (IMD) 2019 is the official measure of relative deprivation for small areas (or neighbourhoods) in England. The IMD ranks every small area (Lower Super Output Area - LSOA) in England from 1 (most deprived area) to 32,844 (least deprived area). LSOAs are areas averaging a population of around 1,500 individuals or 650 households.

Indices of Deprivation 2019

The Indices of Deprivation 2019 provide a set of relative measures of deprivation for lower-layer super output areas across England, based on seven domains of deprivation. The domains are combined using the following weights to produce the overall IMD:

1. Income Deprivation (22.5%);
2. Employment Deprivation (22.5%);
3. Education, Skills and Training Deprivation (13.5%);
4. Health Deprivation and Disability (13.5%);
5. Crime (9.3%);
6. Barriers to Housing and Services (9.3%);
7. Living Environment Deprivation (9.3%).

Deprivation in County Durham and Darlington

Both County Durham and Darlington experienced an increase in relative deprivation (i.e., by rank) between the 2015 and 2019 Indices.

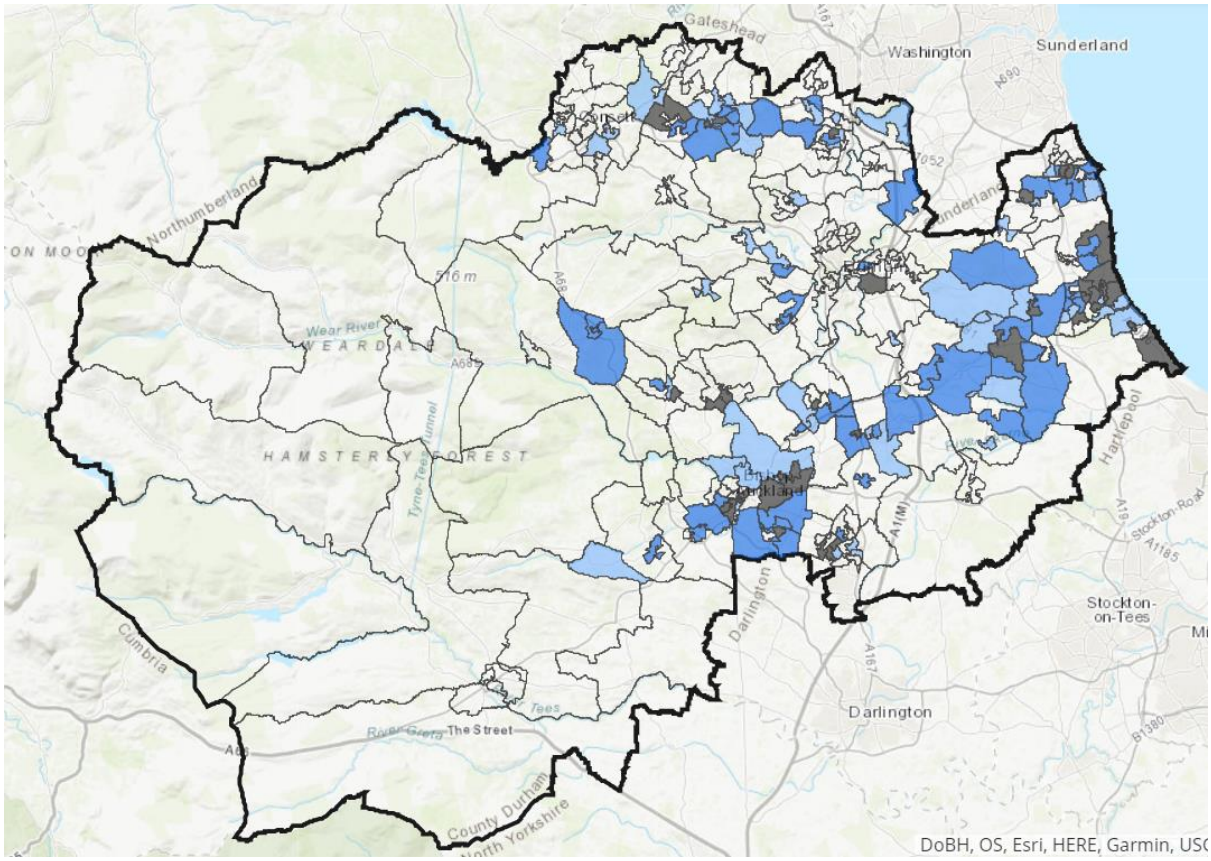
County Durham is in the top 40% most deprived upper-tier local authorities in England and is ranked as the 48th most deprived upper-tier local authority out of 151 nationally, (up from the ID2015 ranking of 59th). Darlington is ranked as the 59th most deprived upper tier local authority (from the previous ranking of 72 in the ID2015).

County Durham displays relatively high levels of deprivation (top 30% nationally) in the Income, Employment, and Health domains, counter-balanced by lower levels of deprivation in the Education, Crime, Barriers to Housing and the Living Environment domains. Trends overall indicate a reversal of the previous continuation of the steady improvements in relative deprivation in previous indices. However, this masks

opposite trends for specific aspects of deprivation: the health domain and housing have demonstrated improvement in relative deprivation.

County Durham has 39 LSOAs (12%) ranked in the top 10 percent most deprived areas in England, an increase of 3 on the 36 LSOAs seen in 2015. These 39 County Durham LSOAs cover an area representing 10.8% of the county's population with 47.3% of the county's population living in areas in the top 30% most deprived nationally, however, not everyone living in these areas will be experiencing deprivation.

The distribution of the county's population by decile is shown below.



[Percentage of LSOAs in County Durham by deprivation score in the overall index by decile. Source: Index of Deprivation in County Durham]

Within County Durham, Woodhouse Close Central is the only area to have shown persistent deprivation and has seen its rank fall from 190 in the ID2015 to 150 in to ID2019, indicating an increase in its relative deprivation level.

However, there are now three LSOAs in the county in the top 1% most deprived:

- Woodhouse Close Central, ranked 150th (190th in 2015);
- Easington Colliery North, ranked 221st (510th in 2015)';

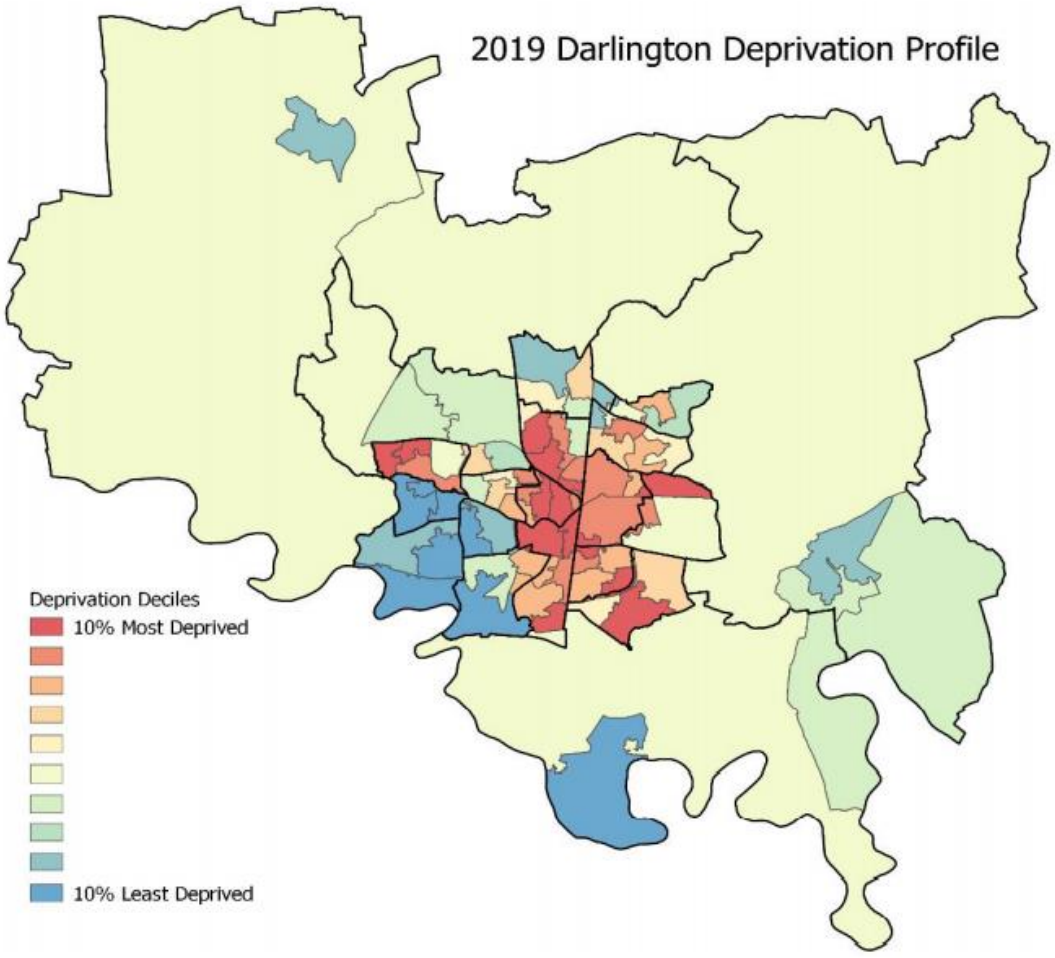
- Horden Central, ranked 291st (396th in 2015).

Many localities continue to experience multiple and intense forms of deprivation but the picture changes from area to area. Of the 39 LSOAs in the top 10% most deprived, four are in the top 10% for all seven subdomains in the index:

- Eden Hill;
- Shotton Colliery;
- Shildon East;
- Coundon North.

Darlington remains the least deprived LA area within the Tees Valley and of the 65 LSOAs in Darlington, 24 have moved into a more deprived decile, 35 have remained in the same decile and only 6 have moved into a less deprived decile. Darlington now has 21 LSOAs (previously 16) within the 20% most deprived in England.

Compared with IMD2015, 50 out of 65 LSOAs (76.9%) have a worse deprivation score and rank in the IMD2019.



[Profile of the 2019 Deprivation deciles for Darlington. Source: 2019 Darlington Deprivation Profile]

Ethnicity

There are 18 ethnic groups recommended for use by the government when asking for someone's ethnicity. These are grouped into five ethnic groups, each with an option where people can write in their ethnicity using their own words. These groups were used in the 2011 Census of England and Wales.

The recommended ethnic groups are:

White	English, Welsh, Scottish, Northern Irish or British
	Irish
	Gypsy or Irish Traveller
	Any other White background
Mixed or Multiple ethnic groups	White and Black Caribbean
	White and Black African
	White and Asian
	Any other Mixed or Multiple ethnic background
Asian or Asian British	Indian
	Pakistani
	Bangladeshi
	Chinese
	Any other Asian background
Black, African, Caribbean or Black British	African
	Caribbean
	Any other Black, African or Caribbean background
Other ethnic group	Arab
	Any other ethnic group

[UK Government list of ethnic groups. Source: Ethnicity facts and figures, list of ethnic groups]

The Office for National Statistics collate data on population estimates by ethnic group for each local authority.

The composition of County Durham by ethnic group is shown below:

Ethnic group	Number	Percentage
White	503,769	98.24%
Mixed or Multiple ethnic groups	3,094	0.60%
Asian or Asian British	4856	0.95%
Black, African, Caribbean or Black British	701	0.14%
Other ethnic group	363	0.07%
Total	512,783	100.00%

[County Durham by ethnic group - source: ONS Census 2011]

The composition of Darlington by ethnic group is shown below:

Ethnic group	Number	Percentage
White	101,595	96.24%
Mixed or Multiple ethnic groups	1,146	1.08%
Asian or Asian British	2,205	2.1%
Black, African, Caribbean or Black British	357	0.34%
Other ethnic group	261	0.25%
Total	105,564	100.00%

[Darlington by ethnic group - source: ONS Census 2011]

The combined composition of the population of County Durham and Darlington is shown below:

Ethnic group	Number	Percentage
White	605,364	97.90%
Mixed or Multiple ethnic groups	4,240	0.69%
Asian or Asian British	7061	1.14%
Black, African, Caribbean or Black British	1058	0.17%
Other ethnic group	624	0.10%
Total	618,347	100%

[County Durham by ethnic group - source: ONS Census 2011]

Religion or belief

The religion or belief of the residents of County Durham is shown below:

Religion or belief	Number of residents	Percentage
Christian	369,715	72.04%
No Religion	107,281	20.90%
Religion not stated	30,362	5.92%
Muslim	1,934	0.38%
Other Religion	1,525	0.30%
Buddhist	1,001	0.20%
Hindu	607	0.12%
Sikh	609	0.12%
Jewish	208	0.04%

[Religion or belief of County Durham residents - source: ONS Census 2011]

The religion of belief of the residents of Darlington is shown below:

Region or belief	Number of residents	Percentage
Christian	71122	67.37%
No religion	25415	24.08%
Religion not stated	6716	6.36%
Muslim	971	0.92%
Sikh	361	0.34%
Hindu	317	0.30%
Buddhist	307	0.29%
Other religion	310	0.29%
Jewish	45	0.04%

[Religion or belief of Darlington residents - source: ONS Census 2011]

The religion or belief of the combined population of both County Durham and Darlington is shown below:

Religion or belief	Number of residents	Percentage
Christian	440,837	71.24%
No Religion	132,696	21.44%
Religion not stated	37,078	5.99%
Muslim	2,905	0.47%
Other Religion	1,835	0.30%
Buddhist	1,308	0.21%
Hindu	924	0.15%
Sikh	970	0.16%
Jewish	253	0.04%
Total	618,806	100.00%

[Religion or belief of County Durham and Darlington residents - source: ONS Census 2011]

Smoking

Smoking is a significant contributary factor in the health of people in County Durham and Darlington. Although smoking prevalence in adults has reduced nationally since 2011, County Durham has 17.00% of adults who smoke compared to the North East rate of 15.3% and the England rate of 13.9% and has seen an increase since 2017. Darlington has 13.70% of the adult population that smoke and is below the North East (15.3%) and England (13.9%) rates.

Year	County Durham		Darlington		North East	England
	Count	Percentage	Count	Percentage		
2017	60,315	14.30%	12,116	14.40%	16.20%	14.90%
2018	63,835	15.00%	11,623	13.80%	16.00%	14.40%
2019	72,418	17.00%	11,529	13.70%	15.30%	13.90%

[Prevalence of smoking in County Durham and Darlington. Source Durham Insight]

The Local Tobacco Control Profile indicates that within County Durham, the smoking prevalence in adults (18+) who are current smokers is 17% (72, 418 smokers) against a North East regional rate of 15.3 and the national rate of 13.9%. This is rated against the best local authority prevalence of smoking in adults of only 8% and the worst rating of 23.4%.

	County Durham smokers	Percentage of population	Regional rate	England rate	Worst	Best
Smoking Prevalence in adults (18+) - current smokers	72,418	17.0%	15.3%	13.9%	23.4%	8.0%

[Smoking prevalence of adults in County Durham. Source Local Tobacco Control Profile]

	Darlington smokers	Percentage of population	Regional rate	England rate	Worst	Best
Smoking Prevalence in adults (18+) - current smokers	11,529	13.7%	15.3%	13.9%	23.4%	8.0%

[Smoking prevalence of adults in Darlington. Source Local Tobacco Control Profile]

Further information on the prevalence of smoking throughout the Service area in key age groups, the link to mental health and occupation groups can be located here: Local Tobacco Control Profile.

Language proficiency

Language is an important defining characteristic of people's identity, and the main language and proficiency in English was asked for the first time in the 2011 Census. The understanding of the main language used throughout the communities of County Durham and Darlington enables the Service to target and deliver prevention and protection activities and communications to meet the needs of residents.

The English language proficiency of the residents of County Durham and Darlington is shown below:

	County Durham	Percentage	Darlington	Percentage
All categories: English as a household language	223,803		46,670	
All people aged 16 and over in household have English as a main language	219,933	98.3%	45,316	97.1%
At least one but not all people aged 16 and over in household have English as a main language	1,949	0.9%	536	1.1%
No people aged 16 and over in household but at least one person aged 3 to 15 has English as a main language	200	0.1%	98	0.2%
No people in household have English as a main language	1,721	0.8%	720	1.5%

[Language proficiency. Source: Durham Insight and Darlington Borough Profile]

According to the 2011 census, only 1.5% of Darlington's population have nobody speaking English at home (just over a third of the national average) and Polish is spoken by 850+ residents, making it the second most common language in Darlington followed by around 250 residents who speak Bengali.

Further information on the variation of languages used in each Local Authority area is available from this link: Office for National Statistics Language in England and Wales 2011.

National, Regional and Local Risks

The National Security Risk Assessment

The NSRA is a classified cross-government and scientifically assessment of the most serious risks facing the UK or its interests overseas. The Civil Contingencies Secretariat, which is part of the Cabinet Office, is responsible for co-ordinating the production of both documents. This involves working closely with a wide range of stakeholders including other UK government departments, devolved administrations, the government scientific community, intelligence and security agencies, and a range of independent experts such as industry partners and academics.

The NSRA is updated every two years and each risk is evaluated using a reasonable worst-case scenario (RWCS) approach and assessed in terms of likelihood and impact. Although some scenarios may be location specific, they could generally occur anywhere in the UK, although the likelihood and/or impact may be different and dependent on the location. The NSRA describes a brief descriptive overview of the risk, the overall level of the risk in terms of likelihood and impact displayed on a matrix, the range of likely impacts, and information about response capabilities, recovery and uncertainties.

There are currently in excess of 130 national risks and threats, which are categorised together into the following ten risk themes:

1. Terrorism	6. Accidents and systems failure
2. Cyber attack	7. Natural hazards
3. Serious and organised crime	8. Human and animal disease
4. Hostile state activity	9. Societal
5. Geopolitical and democratic	10. Conflict and instability

[Risk families within the National Risk Register]

Although there are elements of these risks and threats that influence the level of risk within the communities of County Durham and Darlington, these are high level scenarios which do not present an exhaustive assessment of all national security risks, but instead focusses on those which are likely to require the biggest national level response.

The National Risk Register (NRR)

The NRR is the public facing version of the NSRA and the Civil Contingencies Secretariat is responsible for co-ordinating the production of both documents. This involves working closely with a wide range of stakeholders including other UK government departments, devolved administrations, the government scientific community, intelligence and security agencies, and a range of independent experts such as industry partners and academics.

The NRR provides information on the most significant risks that could occur in the next two years and which could have a wide range of impacts on the UK. The NRR also sets out what the UK government, devolved administrations and other partners are doing about them. This document is particularly useful to local emergency planners, resilience professionals and businesses, helping them to make decisions about which risks to plan for and what the consequences of these risks are likely to be.

It also contains information and advice for the public. It is important that individuals and households are aware of the risks that could affect them, and what actions they can take to prepare for and respond to these risks.

The NRR describes that no risk assessment will ever be able to identify and assess every possible risk – unforeseeable risks can emerge, or previously identified risks can materialise in novel or surprising ways. The NRR is not a prediction of the risks that will materialise in the next two years, but it does help to ensure that the UK has the right systems and resilience practices in place to manage risks both proactively and when they arise.

Risks in the NSRA and the NRR are represented as ‘reasonable worst case scenarios’. This means that they represent the worst plausible manifestation of that particular risk (once highly unlikely variations have been discounted). They are

assessed in terms of likelihood and impact and then plotted onto a matrix, as shown below:

Instead of plotting each individual risk onto the matrix, a number of risks have been thematically grouped, bringing together risks that share similar risk exposure and require similar capabilities to prepare, mitigate and respond. This is partly to bring similar risks together in a more usable way but is also due to the sensitivity of some of the risks assessed in the NSRA. The position of each risk category on the matrix below is an average based on the positions of all the different risks that belong to that category.

Impact of the reasonable worst case scenario						
	E			7 25		
	D	34		12 13 29		
	C		18 28 33 36	14 19 21 26 27 38	2 3 6 15 16 17 20	
	B	30	24	35	4 5 9 10 11 23 32 37	
	A			8 22	31	
		<1 in 500	1 to 5 in 500	5 to 25 in 500	25 to 125 in 500	>125 in 500
	Likelihood of the reasonable worst case scenario of the risk occurring in the next year.					

[Risks rating matrix from the National Risk Register 2020]

Index of risks from the National Risk Register:

Malicious Attacks

1. Attacks on publicly accessible locations
2. Attacks on infrastructure
3. Attacks on transport
4. Cyber attacks
5. Smaller scale CBRN attacks
6. Medium scale CBRN attacks
7. Larger scale CBRN attacks

8. Undermining the democratic process

Serious and Organised Crime

9. Serious and organised crime – vulnerabilities
10. Serious and organised crime – prosperity
11. Serious and organised crime – commodities

Environmental Hazards

12. Coastal flooding
13. River flooding
14. Surface water flooding
15. Storms
16. Low temperatures
17. Heatwaves
18. Droughts
19. Severe space weather
20. Volcanic eruptions
21. Poor air quality
22. Earthquakes
23. Environmental disasters overseas
24. Wildfires

Human and Animal Health

25. Pandemics
26. High consequence infectious disease outbreaks
27. Antimicrobial resistance
28. Animal diseases

Major Accidents

29. Widespread electricity failures
30. Major transport accidents
31. System failures
32. Commercial failures
33. Systematic financial crisis
34. Industrial accidents – nuclear
35. Industrial accidents - nonnuclear
36. Major fires

Societal Risks

37. Industrial action
38. Widespread public disorder

National long term trends

The Government's assessment of risks is based on a continuous cycle of learning lessons from real events, drawing on new scientific or technical evidence and improving the way in which the likelihood and potential impacts of risks are calculated.

Climate change

Climate change is a significant crisis facing the global community, with warmer winters and hotter summers, plus more variable rainfall and more severe storms.

Sea levels are rising by 3 millimetres a year around the UK coastline, increasing the risk to buildings close to the shoreline. Extreme weather – flooding, storms, heatwaves – already causes significant disruption throughout the UK every year, so it should not be underestimated that a more extreme climate will have a greater impact on the lives on individuals, the economy and the local environment.

Geopolitics

Conflict and instability around the world are likely to continue, driven by resource shortages and regional tensions, plus the displacement of large groups of people due to issues such as climate change. Regional warfare can enable terrorist activity and an increasing number of non-state actors will likely exert power in arenas such as cyber space.

Technology

Technological advancements, combined with major changes in how communities live and work, will be a key factor in the risk landscape in the coming years. Technology can bring people closer together, foster a globalised economy and reduce unequal access to information around the world. However, it can also create and enhance vulnerabilities and offer opportunities for malicious actors to do harm throughout our communities.

Cyber security is fundamental to individual and business resilience and will help protect everyone from issues including malware, viruses, ransomware, fraud, and intellectual property theft. Other technological advances, such as the development of artificial intelligence and quantum technologies, will see shifts in how the economy functions and the nature of how individuals work in the future.

Health and demographics

Health can be influenced by numerous factors such as age, socio-economic status and lifestyle. Chronic health problems (such as obesity – which can increase an individual's vulnerability to other diseases – or poor mental health) are likely to become increasingly pervasive in the UK due to social or economic structural changes that might arise from COVID-19, lifestyle changes, and population ageing. Substance abuse or homelessness might also arise concurrently alongside the

economic impacts of COVID-19. There will be an increasing vulnerability to dementia and cancer in the UK as the population continues to age, and this in turn will put increasing pressure on our health and social care systems.

The process where drugs are no longer effective at treating infections caused by bacteria, viruses and parasites (antimicrobial resistance) is one such trend with a growing impact. The World Health Organisation lists antimicrobial resistance as one of the most significant risks facing the world and estimates that it could cause a 3.5% global drop in GDP by 2050 through lost productivity, stemming from a workforce that is sicker with more challenging ailments for longer periods of time.

Community Risk Register

Community Risk Registers (CRRs) consider the likelihood and potential impact of a range of hazards occurring in specific areas of England and Wales. They are approved and published by Local Resilience Forums (LRFs) which have been established under the Civil Contingencies Act. They include representatives from local emergency services, and public, private and voluntary organisations. In order to produce the Community Risk Registers, LRFs use a combination of their own judgement about each risk, as well as guidance provided by central government drawn from the National Risk Assessment (NRA).

The County Durham and Darlington Community Risk Register provides information on emergencies that could happen within the Service area, together with an assessment of how likely they are to happen and the impacts of they do. The CRR also provides information for the communities of County Durham and Darlington on what to do in an emergency and guidance on recovery.

The CRR is based on the NRR and is centred around a range of data including historic, scientific and expert analysis to assess the risks to the UK as a whole. Using this information, relevant local risks are identified and additional risks are incorporated This process involves looking at a range of data, including incidents that have occurred, local knowledge and expert guidance.

The risks described the CRR are as follows:

Human disease (pandemic influenza).

An influenza type pandemic remains the highest assessed natural hazard which could have a significant impact on our communities. The emergence of new infectious diseases – such as SARS and COVID 19 - is unpredictable as

they can spread quickly and erratically between geographic areas. Each pandemic is different and the nature of the virus, where and the time of year it will emerge, and its impacts cannot be known in advance.

Flooding.

Severe weather and flooding can occur at any time of the year and can be a risk to national security, human welfare and critical infrastructure. Damage to essential services, particularly to critical infrastructure could make our communities more vulnerable to other risks, and some flooding may have significant impacts on industry, agriculture and our local economy.

Failure of the electricity network.

The failure of the electricity network can affect a wide range of essential services with disruption to telecommunications, transport services, healthcare provision, water supplies, the internet and schools. A national blackout has never happened, but in recent years severe weather and storms have caused significant damage to the electricity distribution overhead line network, resulting in the long duration loss of power to many communities

Cyber.

Cyber space has become central to our economy and our society. Increasing our reliance on cyber space brings new opportunities but also new threats. While cyber space fosters open markets and open societies, this very openness can also make us more vulnerable to criminals, hackers, foreign intelligence services who want to harm us by compromising or damaging our critical data and systems. Worldwide interconnectivity and digitalisation is transforming how individuals, businesses and local authorities live an operate with a wide scale shift of services and capabilities online.

Malicious incidents.

The Government's counter terrorism strategy, CONTEST is an integrated approach based on four main work streams, each with a clear objective to try and stop terrorist attacks occurring or, when they do, to mitigate their impact.

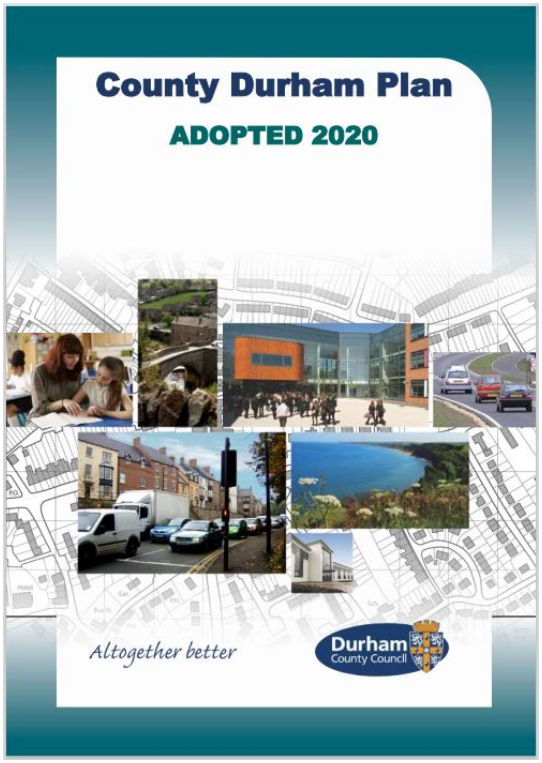
Adverse weather.

The weather in County Durham and Darlington is varied and dynamic. Weather patterns around the Pennines in West Durham can bring torrential rain and extremely severe snow and ice (the highest road in the County is the A66 trans-Pennine route at Bowes Moor).

Local Authority Plans

Local plans are the frameworks for development and future regeneration for locations to improve the lives of existing and future residents and are developed Local Authorities to meet the differing needs of communities. Local Plans, which are reviewed every five years, are developed to promote the quality of life, provide jobs for a flexible and skilled workforce , protect and enhance the environment, and support the towns and villages of County Durham and Darlington.

County Durham Local Plan



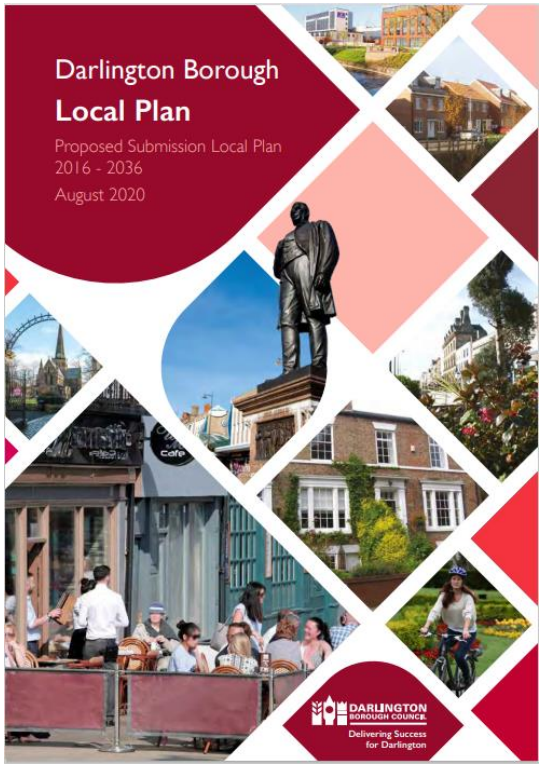
The County Durham Plan provides the policy framework for the county up to 2036 to support the development of a thriving economy and sets out how many new homes and jobs need to be created and where they will go. Future travel and infrastructure needs are also described with measures to protect the heritage of the built and natural environment, landscapes and habitats.

The Plan plays a key role in shaping the physical environment which can have a significant impact on health and well-being by making it possible for people to make healthier lifestyle choices. Many people in County Durham today live in different social circumstances and experience avoidable differences in health, well-being and length of life. Creating a fairer society is fundamental to improving the health of the whole population and ensuring a fairer distribution of good health.

The County Durham Plan is seeking to achieve a successful and sustainable future in which all of our residents have the opportunity to access good housing and employment in an environment which delivers a healthy and fulfilled lifestyle and can be located at this link: County Durham Plan (Adopted 2020)

Darlington Local Plan

The Darlington Local Plan is a framework for growth and aims to ensure that Darlington becomes an even more sustainable location in which people increasingly choose to live, work and visit. Not only does it help to deliver the economic strategy through providing new housing to meet local needs; it supports the needs of our current and future workforce; and delivers other new developments with provision of key infrastructure.



The Darlington Local Plan aims to t help deliver as economic strategy through providing new housing to meet local needs; and supports the needs of our current and future workforce and can located at this link: Darlington Borough Local Plan (August 2020)

Housing

Within County Durham there are plans in place to develop 1,308 new homes each year of mixed type, size and tenure over the period 2016 to 2035. This will result in an additional 24,852 new houses by 2035. Significant housing developments in Durham include Sniperley Park and Sherburn Road with more information on the future. Further information on future housing developments within County Durham and each station area can be located in the County Durham Plan

The Darlington Borough Local Plan describes a housing requirement of 422 net additional dwellings each year over the period of the plan to 2036. This will result in a significant growth to the population of Darlington with a total net minimum requirement in excess of 8,400 dwellings, with strategic expansion in the Skernigham area to the north east of Darlington, and other significant developments in Lingfield Point, Faverdale, Hurworth, Great Burden, Coniscliffe Park and Branksome. Further information on the proposed housing requirements and development of Darlington up to 2036 can be found in the Darlington Borough Local Plan 2016-2036 (updated 2020)

Future business allocation

The employment land availability describes the total amount of land reserved for industrial and business use awaiting development with up to 300 hectares planned

for future businesses in County Durham and up to 172 hectares of land allocations for employment land within Darlington in the period up to 2036.

The most significant business developments throughout the Service area will occur at Forrest Park (Newton Aycliffe), Jade Park (East Durham), Meadowfield Industrial Estate, Integra61 (land south of Bowburn Road), Ingenium Park and Greater Faverdale in Darlington.

Health inequalities

Population growth and an ageing population are placing pressure on primary healthcare facilities in Darlington. Population projections indicate an overall population increase of around 12,000 people between 2016 and 2036(12), which is around 3000 extra patients in every five year period. However, the over 65 population, which places a higher demand on services, is projected to increase from 21,000 in 2016 to 31,000 by 2026

Health inequalities in Darlington are apparent with the most deprived areas tending to experience the poorest health. Across County Durham there are major differences in the health that people experience and there remains differences between the health of local people and those across England. The County Durham Joint Health and Wellbeing Strategy describes the strategy and initiatives to improve healthy life expectancy and reduce the gap within County Durham and between County Durham and England, have a smoke free environment with over 95% of residents not smoking,

Risk scenarios

To assess the foreseeable fire and rescue related risks within the Service area, the Community Risk Profile identifies and describes the risks within our communities, and the consequences that could arise from the hazards and cause harm to individuals. Risks are assessed and prioritised accordingly through their position on the Service community risk rating matrix.

The risk scenarios within the Community Risk Profile are based on the range of incidents attended over the three year reporting period, from 1 April 2017 to 31 March 2020, and are based on the following risk themes or families:

- Fires;
- Rescues;
- Transport;
- Weather;
- Societal.

The categories of different types of fires are aligned to the Home Office Fire Statistics Definitions, and rescue related risks are based on the historical range of incidents attended by the Service over the three year reporting period. Transport risks are focussed on the modes of transport throughout the Service area, and while there are many weather related risks that could impact on the communities of County Durham and Darlington, the risk with the greatest likelihood is that of flooding. Other societal risks are based on miscellaneous scenarios that the Service has attended within the reporting period or has the potential to attend.

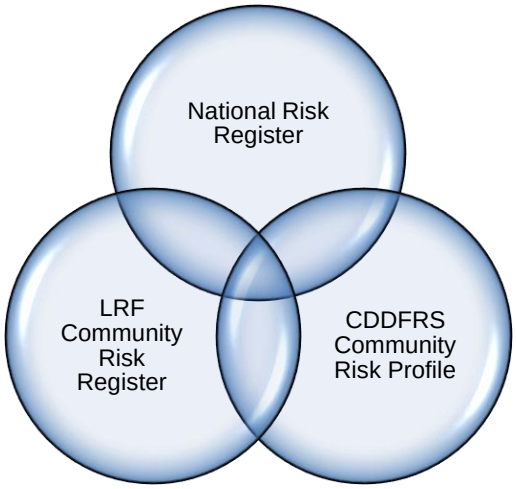
Further information on the methodology is described within appendix one, with an example of how the likelihood and impact of the risk scenarios are scored. Likelihood is based on the assessment of how many times an incident occurred within the previous three years (1095 days) to provide a percentage prediction of future probability within the next year, while the impact of each scenario is assessed against five dimensions of community harm (Human Welfare, Behavioural, Community Economic Impact, Essential Social Services and the Environmental impact). Where appropriate, national level impact scales which are based on the population of the United Kingdom), such as population, economic impact and environmental impact are used proportionately to reflect the demographic and geographic size of the Service area.

Where appropriate, the degree of confidence in each risk assessment is described. High frequency scenarios are usually assessed with a high degree of confidence as their impact can be assessed with a significant level of data and intelligence, while the risk scenarios that occur rarely are assessed with low to moderate confidence due to the limited understanding of the full range of impacts within the assessment.

One of the dimensions of harm against which each scenario is assessed is the effect on the community economic impact, and this specific dimension is evaluated with low to moderate confidence. There is no current assessment of the economic cost of fire (*the extant guidance was published by DCLG in 2008*), however, one of the eight projects of the NFCC Central Programme Office Community Risk Programme is to establish the current economic cost associated with fires. On publication of a more comprehensive understanding of the economic cost of fire, the assessments of community risks will be reviewed.

The effectiveness of the community risk profile will be monitored and reviewed, at least on an annual basis, or as often as considered necessary.

Linked and Compound Risks



Although all the risks described within the National and LRF Community Risk Registers, and the CDDFRS Community Risk Profile are generally distinct and time limited events, there is the possibility of some risks occurring simultaneously. Some risks can be linked together in their causes and impacts, while some others are compounded where the impact of one risk magnifies the impact of another.

Linked risks are simultaneous or near simultaneous risks that share a common cause or are caused by another risk. At the national level an example of linked risks are severe storms and gales that would increase the likelihood of fluvial flooding, while drought and heatwave can happen together. Within the CDDFRS Community Risk Profile an example of linked risks would be a non-residential building fire causing both an industrial fire and a hazardous materials incident.

Compound risks are those where the occurrence of one risk makes another significantly more impactful, however, they do not share a common cause. At the national level an example of compound risks would be low temperatures and heavy snow increasing the impact of fuel shortage. Within the CDDFRS Community Risk Profile an example of compound risks would be the chronic nature of scenarios such

as road vehicle or secondary fires impacting on the disruption to resources to attend other risks.

R1 Dwelling fires

Dwelling fires are a category of primary fires and are fires in properties that are a place of residence i.e. places occupied by households such as houses and flats, excluding hotels/hostels and residential institutions. Dwellings also includes non-permanent structures used solely as a dwelling, such as houseboats and caravans.

Dwelling fires may be accidental or deliberate (or not known) in their cause. In the three year reporting period from 1 April 2017 to 31 March 2020, the Service attended 894 dwelling fires, with their causes shown below:

Dwelling fires causes	Number of dwelling fires	Percentage of total
Accidental	692	77.4%
Deliberate - others property	114	12.8%
Deliberate - own property	27	3.0%
Deliberate - unknown owner	38	4.3%
Not known	23	2.6%
Total	894	100%

[Causes of dwelling fires from 1 April 2017 to 31 March 2020]

All fire and rescue authorities must promote fire safety and provide information, publicity and encouragement in respect of the steps to be taken to prevent fires and deaths or injury by fire. Fire and rescue authorities must also make provision to extinguish fires in their area and protect life and property in the event of fires. Dwelling fires can result in physical and/or mental injuries to any residents or neighbours involved, and in some circumstances can result in fatalities. In addition to the human welfare costs associated with dwelling fires, there is also a significant, environmental and economic burden associated with the property damage and the restoration back to the original integrity of the structure and the internal fixtures and fittings.

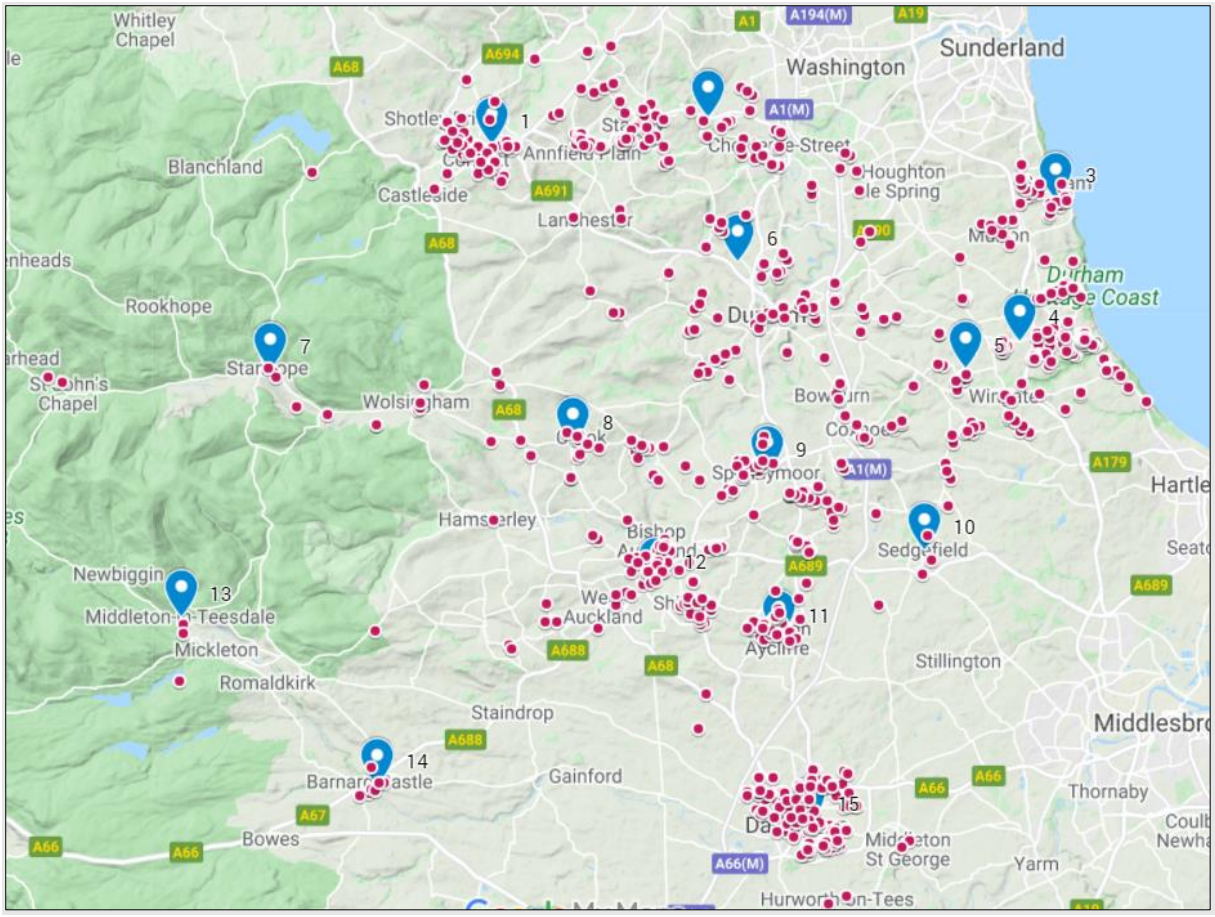
Based on historical and statistical data, and with professional judgement, the reasonable worst case scenario for a dwelling fire would be a significant fire on all floors of a dwelling, resulting in extensive fire and smoke damage. Neighbouring attached premises could also become involved through the spread of fire through common roof voids and the domestic utilities (gas, electric, water and communications) would become compromised due to the excessive fire and high internal temperatures. This scenario could result with any residents sustaining injuries (smoke inhalation, burns or musculoskeletal) as a result of the fire, or during their rescue, and could result in the loss of life to one or more of the of the residents of the dwelling. This scenario would require the involvement of partner agencies and the local authority or third sector may provide subsequent temporary accommodation, in addition injuries sustained will have a significant impact upon health and social care providers and the time involved with subsequent investigations or inquest is significant.

The distribution of total dwelling fires (accidental, deliberate and not known) throughout the stations within the service area is shown below:

Station area	Number of dwelling fires	Percentage
Darlington	166	18.6%
Peterlee	139	15.5%
Consett	86	9.6%
Bishop Auckland	84	9.4%
High Handenhold	81	9.1%
Durham	72	8.1%
Spennymoor	66	7.4%
Newton Aycliffe	56	6.3%
Seaham	49	5.5%
Wheatley Hill	33	3.7%
Crook	29	3.2%
Stanhope	14	1.6%
Barnard Castle	10	1.1%
Sedgefield	6	0.7%
Middleton-in-Tees	3	0.3%
Total	894	100%

[Distribution of dwelling fires in the Service area from 1 April 2017 to 31 March 2020]

In the three year reporting period, dwelling fires have occurred in the locations shown below.



[Locations of dwelling fires (accidental, deliberate and not known causes) throughout the service area]

Further assessment of dwelling fire data shows the types of premises and the locations where fires have started within dwellings. The dwelling fires in the three year reporting period occurred in the following range of premises:

Type of dwelling	Number of dwelling fires	Percentage
House - single occupancy	666	74.5%
Bungalow - single occupancy	86	9.6%
Up to 3 storeys	65	7.3%
Self-contained sheltered housing	26	2.9%
Up to 2 storeys	25	2.8%
3 or more storeys	11	1.2%
Caravan/mobile home (permanent dwelling)	8	0.9%
4 to 9 storeys	3	0.3%
Other Dwelling	2	0.2%
Stately home	2	0.2%
Total	894	100%

[Types of premises and frequency of dwelling fires]

Within each dwelling, fires are identified as starting in numerous different locations, although the main places are kitchens (43.8%), bedrooms (12.8%) and living rooms (11.3%), as shown below:

Locations of where fires start within dwellings	Number	Percentage
Kitchen	388	43.4%
Bedroom	114	12.8%
Living room	101	11.3%
External fittings	57	6.4%
Corridor/Hall	33	3.7%
External Structures	28	3.1%
Bathroom/Toilet	22	2.5%
Utility room	18	2.0%
Other locations (garages, conservatories, roof space, stairs etc)	133	14.9%
Total	894	100%

[Locations of where fires start within dwellings]

Analysis of incident data shows that there is a variation in the frequency of dwelling fires throughout the year, with more occurring during the months of November (9.3%) and August (9.2%) in comparison to March (6.9%) and July 6.8%). The variaiton of the monthly frequency of dwelling fires is shown below:

Month	Number of dwelling fires	Percentage
November	83	9.3%
August	82	9.2%
December	80	8.9%
October	79	8.8%
June	79	8.8%
September	78	8.7%
February	77	8.6%
May	75	8.4%
April	73	8.2%
January	65	7.3%
March	62	6.9%
July	61	6.8%
Total	894	100.0%

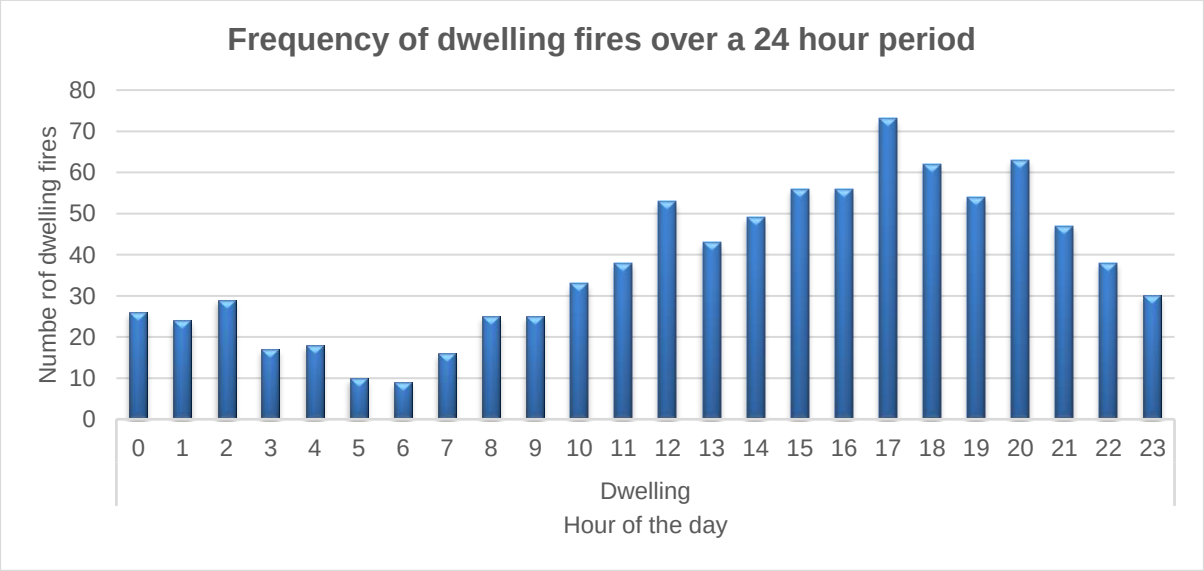
[Monthly variation of dwelling fires during the reporting period]

Furthermore, the frequency of dwelling fires is not consistent throughout each week, with the variation of when dwelling fires occur on which days of the week shown below:

Day of the week	Number of dwelling fires	Percentage
Sunday	144	16.1%
Wednesday	143	16.0%
Tuesday	139	15.5%
Thursday	131	14.7%
Saturday	128	14.3%
Friday	110	12.3%
Monday	99	11.1%
Total	894	100.0%

[Frequency of dwelling fires and days of the week[ ]

Over a 24 hour period, most dwelling fires occur in from the afternoon into the evening, with an increase in the frequency between 12 pm and 1 pm, as shown below.



[Frequency of dwelling fires over a 24 hour period]

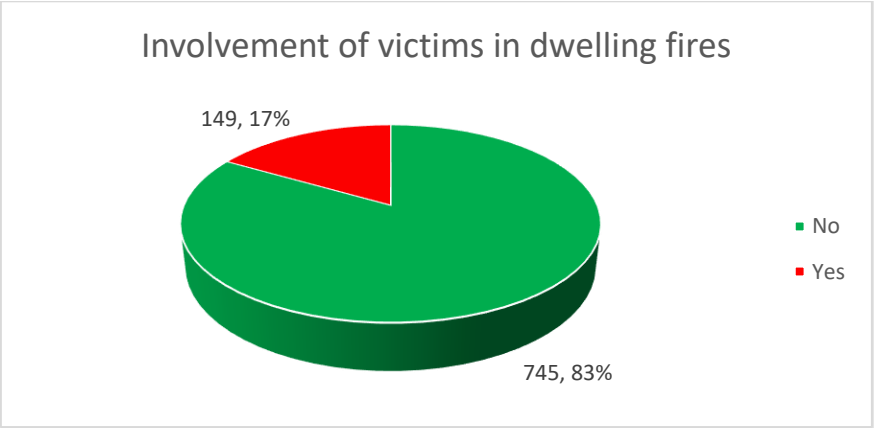
Of the numerous different sources of fires, dwelling fires primarily start with people cooking food, with cooking oil or fat being the main item first ignited, with other structural items such as wiring insulation, external and internal fittings and food being other significant items of first ignition, as shown below:

Items first ignited in dwelling fires	Number	Percentage
Food - Cooking oil or fat	112	12.5%
Structural/Fixtures/Fittings - Internal - Wiring insulation	79	8.8%
Structural/Fixtures/Fittings - External - External fittings	72	8.1%
Food - Other	68	7.6%
Structural/Fixtures/Fittings - Internal - Internal fittings	57	6.4%
Foam, rubber, plastic - Plastic - raw material only	52	5.8%
All other items first ignited	454	50.8%
Total	894	100%

[Items first ignited in dwelling fires]

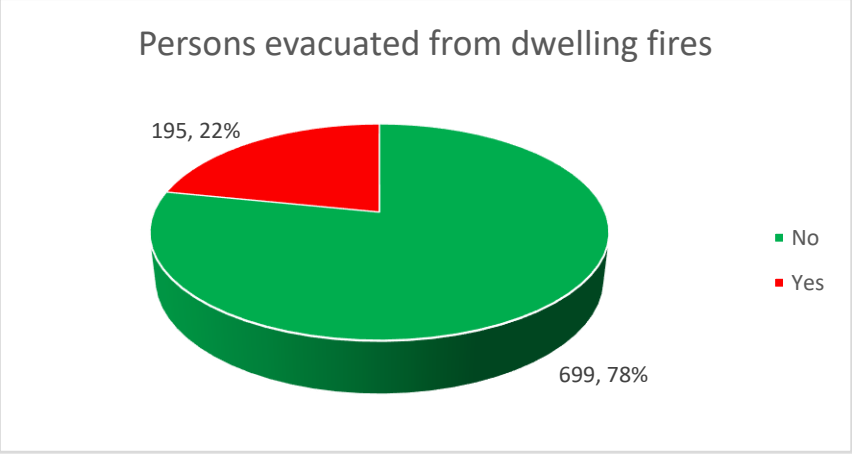
The most frequent sources of ignition of dwelling fires are cooker and ovens, electrical wiring, cables and plugs, fire spread from a secondary fire, naked flames and smoking materials.

Of the dwelling fires that occurred during the reporting period, 83% did not involve any victims, while the remaining 17% resulted in an occupier of the dwelling experiencing injuries, as shown below:



[Involvement of victims in dwelling fires]

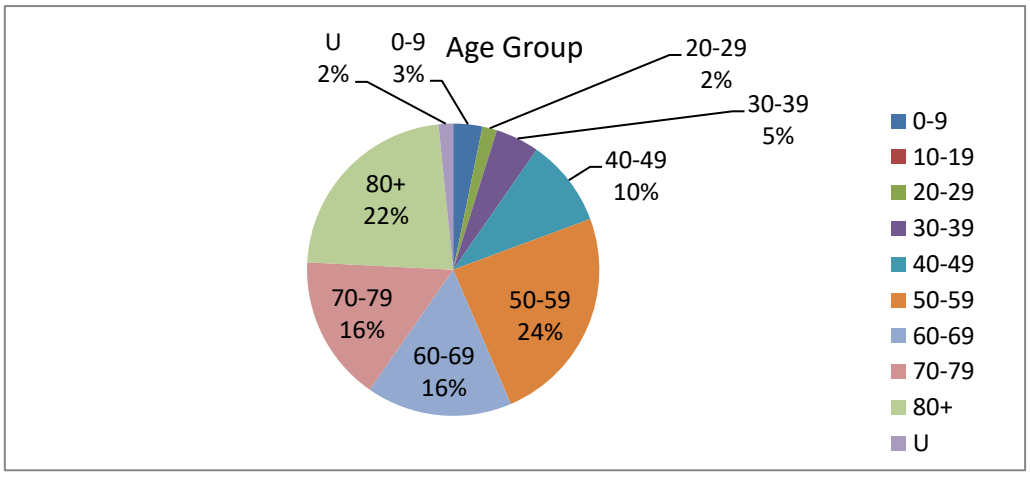
Analysis of dwelling fire data for the reporting period indicates that 78% of the persons involved did not need to be evacuated from the dwelling, while the remaining 22% needed to be evacuated by Service personnel, as shown below:



[Persons evacuated from dwelling fires]

Although there is insufficient data from fatal dwelling fire incidents within in the reporting period to fully understand the factors associated to, and that contribute towards, the loss of life, assessment of factors associated with the fire fatalities for incidents since 2002, shows the following key themes:

Almost two thirds (63%) of the fatal incidents involved males, while only 37% involved females. Most (24%) fire fatalities occurred in the 50-59 age group, while 22% occurred in the 80+ age group and 16% of the fatalities occurred in each of the 60-69 and 70-79 age groups, as shown below:

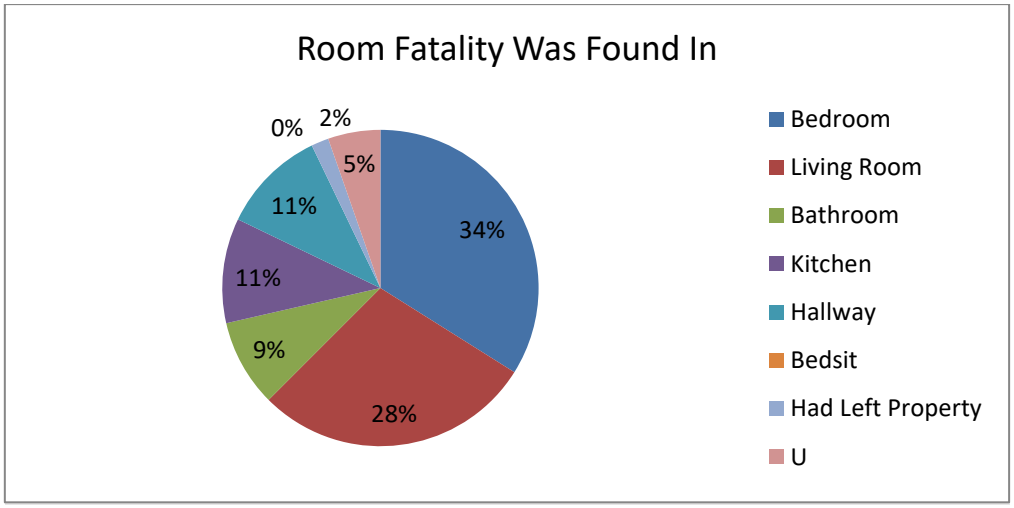


[Distribution of fire fatalities for age group since 2002]

Further analysis of Service data indicates that 65% of the fatalities from dwelling fires were known smokers, while 13% did not smoke and it was unknown on 22% of the occasions whether the victim was a smoker. For known mental health issues (such as, dementia, depression, schizophrenia, acute paranoia behaviours or bipolar disorder), 45% of the fatal victims from dwelling fires had known mental health issues, while 28% didn't have any issues, and it was unknown on 45% of the fatal occasions whether the victim had any mental health issues. For alcohol use, 46% of the fatal victims had a known negative alcohol

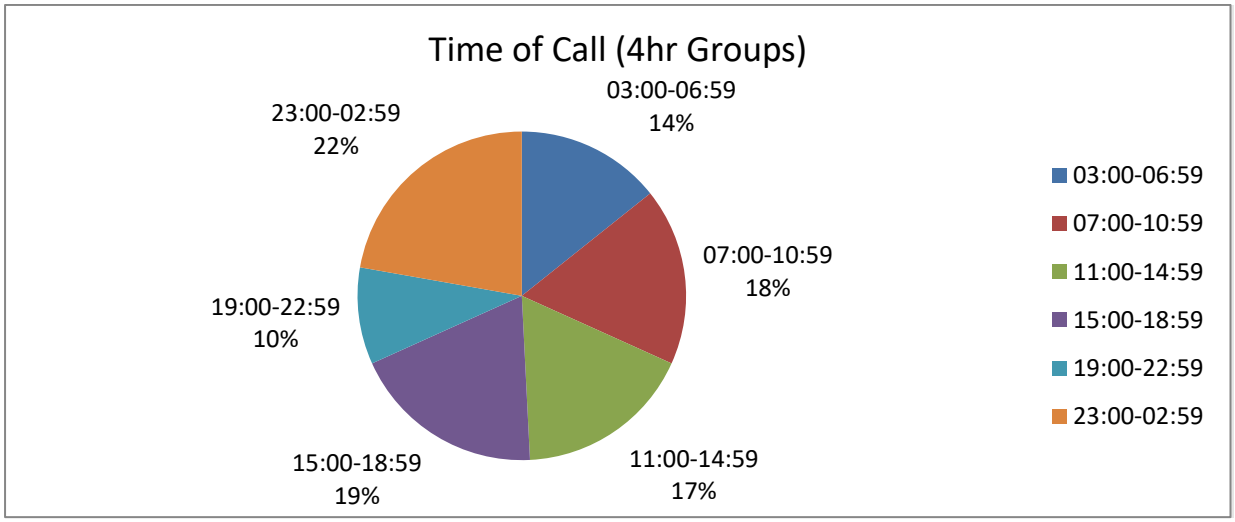
consumption, while 17% were not known excessive consumers of alcohol, and the alcohol consumption of the victims was unknown in 37% of the fatal incidents.

Most (34%) fatal victims from dwelling fires were located in bedrooms, while 28% were located in living rooms, and 11% were found in both kitchens and hallways.



[Distribution of the locations of rooms were fire fatalities were located since 2002]

As shown below, most fatal victims from dwelling fires occurred in the four hours from 2300 hrs to 0259 hrs, while 19% occurred between 1500 hrs and 1859 hrs, and 18% occurred between 0700 hrs and 1059 hrs.



[Distribution of times with four hour groups when fatal dwelling fires occurred]

Furthermore, analysis of national data enables a comparison to be made between the prevalence of dwelling fires throughout County Durham and Darlington and all other fire and rescue services.

Although the number of year-on-year non-fatal casualties requiring hospital treatment per 1,000,000 population decreased in England between 2018/19 and 2019/20, there was quite a lot of volatility across FRSs and between time periods, partly due to relatively low numbers. In 37 FRSs, including County Durham and Darlington Fire and Rescue Service, the number of non-fatal casualties per 1,000,000 population in 2019/20 was lower than the five year historic average between 2010/11 and 2014/15. In seven FRSs the number of non-fatal casualties requiring hospital treatment is higher than the historic average. This, however, tends to be by a relatively small amount and reflects the high levels of volatility of this measure.

This risk is not influenced by either the National Risk Register (2020) or the County Durham and Darlington Local Resilience Forum Community Risk Register. Based on the distribution of dwelling fires at all the locations throughout the Service area, this risk is considered to be present in all station areas, to varying degrees. Due to the number of dwelling fires during the reporting period, the dwelling fire risk is assessed with a high degree of confidence, where very few areas of the assessment are significantly affected by uncertainty.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Dwelling fires

2017/18		310
2018/19		297
2019/20		287
Three year total		894
Three year average		298
Risk assessment	Likelihood	5
	Impact	4

Impact	5					
	4					*
	3					
	2					
	1					
		1	2	3	4	5
		Likelihood				

R2 Other residential building fires

Other residential building fires are a classification of primary fires and include institutional properties such as hostels for homeless people, hotels and B&Bs, nursing/care homes, student halls of residence, children's homes, towing caravans on site and other holiday residence (cottage or flat etc).

Other residential building fires can be accidental or deliberate in their cause. In the three year reporting period from 1 April 2017 to 31 March 2020, the Service attended 41 other residential building fires, with their causes shown below:

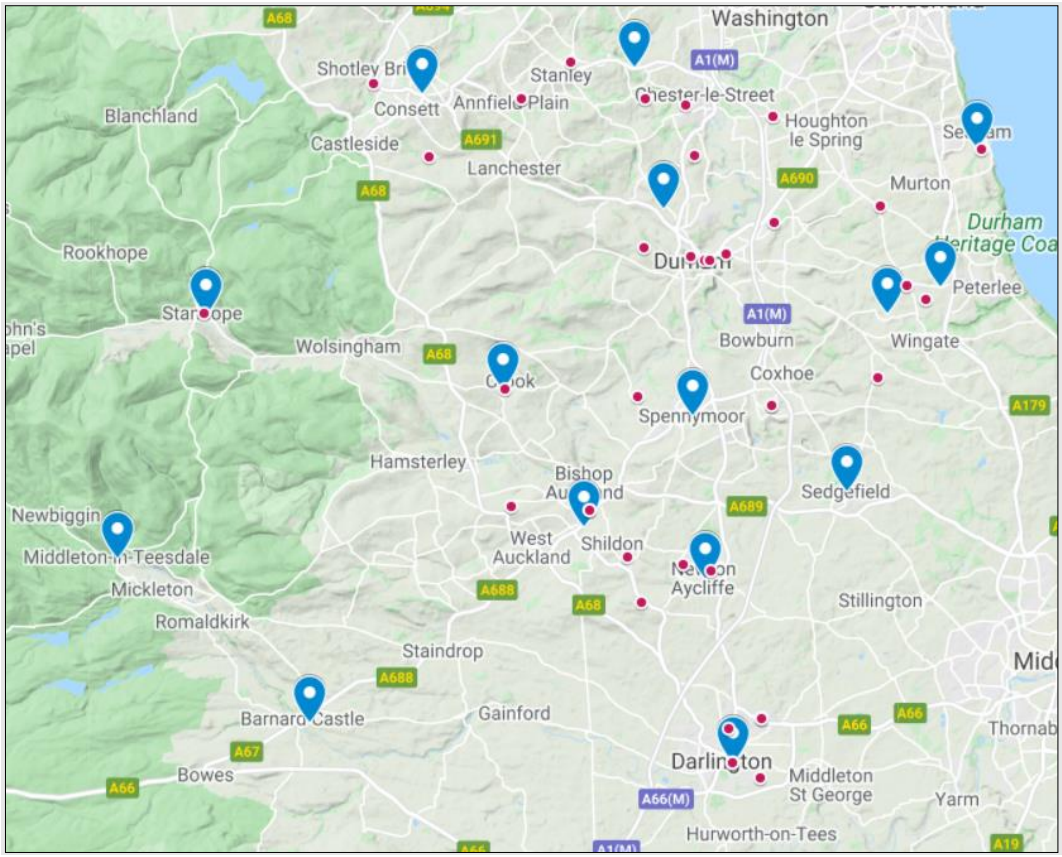
Cause of fire	Number of other residential building fires	Percentage
Accidental	34	82.9%
Deliberate - others property	5	12.2%
Deliberate - unknown owner	2	4.9%
Total	41	100.0%

[Cause of other residential building fires]

The other residential building fires are not widespread throughout the Service area, with the station areas where these fires occurred is shown below:

Station area	Number of other residential building fires	Percentage
Durham	7	17.1%
Darlington	6	14.6%
Consett	5	12.2%
Bishop Auckland	4	9.8%
High Handenhold	4	9.8%
Peterlee	3	7.3%
Spennymoor	3	7.3%
Newton Aycliffe	3	7.3%
Stanhope	2	4.9%
Seaham	2	4.9%
Wheatley Hill	1	2.4%
Crook	1	2.4%
Total	41	100.0%

[Prevalence of other residential building fires]



[Locations of other residential building fires]]

The majority of other residential building fires occur in nursing and care homes, with the majority of these in the Darlington and Consett station areas, while the majority of fires within hotels and motels are within the Durham and Darlington station areas.

Types of other residential buildings	Number of fires	Percentage
Nursing/Care	19	46.3%
Hotel/motel	7	17.1%
Towing caravan on site (not on tow)	5	12.2%
Retirement/Elderly	3	7.3%
Student Hall of Residence	2	4.9%
Other holiday residence (cottage, flat, chalet)	2	4.9%
Hostel (e.g. for homeless people)	1	2.4%
Other Residential Home	1	2.4%
Children's	1	2.4%
Total	41	100.0%

[Types of other residential building fires]

The majority of the fires in other residential buildings start in kitchens (34.1%), laundry rooms (17.1%), bedrooms (9.8%) and hallways (7.3%). The extent of fire and heat damage caused from fires in other residential buildings is usually limited to the item first ignited (39%) or limited to the room of origin (17.1%).

Examples of fires in other residential buildings include small fires in care home laundry rooms, such as fires that have started in driers, fires that have started in other defective kitchen appliances such as cookers or microwaves and small electrical fires in wiring or lift motor rooms.

Although some fires in other residential buildings have resulted in a loss of life, such as the 14 residents of the fire at the Rosepark care home in Uddingston, South Lanarkshire, on 31 January 2004, incidents that result in the loss of life are rare. Based on historical precedent, statistical models, forecasts, and professional judgement, the reasonable worst case scenario for a residential building fire would be a fire in a laundry or kitchen area of a nursing or care home that caused significant fire and smoke damage. The scenario would require the evaluation of multiple residents, some of whom may suffer minor injuries and may experience smoke inhalation, leading to hospital admission. For this scenario, emergency services may take a significant amount of time to extinguish the fire and carry out subsequent investigation. There could be an impact on local social care if residents needed to be rehomed and the time taken for the return to normal operation of the care/nursing home.

The risk of fires in other residential buildings such as hostels for homeless people, hotels and B&Bs, nursing/care homes, student halls of residence is influenced by the inclusion of major fires within the National Risk Register (2020). Based on the distribution of fires in other residential buildings at the locations throughout the Service area, this risk is considered to be present in all station areas, to varying degrees, with the exception of Barnard Castle, Middleton-in-Teesdale and Sedgefield. Due to the number of fires in other residential buildings, this risk is assessed with a moderate degree of confidence, where some areas of the assessment are significantly affected by uncertainty creating uncertainty bounds of up to1 or -1 in the overall impact score.

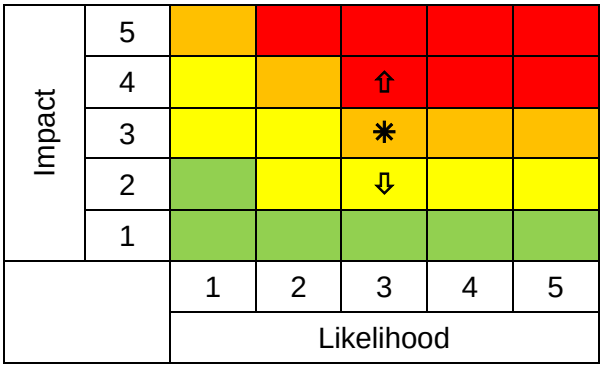
The service has a statutory duty to enforce the Regulatory Reform (Fire Safety) Order 2005 within our area and to reduce the risks of fire causing death, serious injury and property-related loss in the community. The service fulfils this duty through the delivery of fire safety audits in premises where the Fire Safety Order applies, including residential (R2) and non-residential (R3) buildings. Further information on the management strategy and risk based inspection programme for enforcing the provisions of the Fire Safety Order are presented in Appendix 4.

CDDFRS data shows that although the Service delivers a significant number of fire safety audits in relation to other fire and rescue services, and is above the five year reported average for this activity, the proportion of all fire safety audits that result in an unsatisfactory outcome is below both the Service and England five year average.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Other residential building fires

2017/18		15
2018/19		11
2019/20		15
Three year total		41
Three year average		14
Risk assessment	Likelihood	3
	Impact	3



R3 Other non-residential building fires

Other non-residential building fires are a broad classification of primary fires and include fires in properties such as offices, shops, factories, warehouses, restaurants, public buildings, religious buildings.

The majority of premises within this scenario are covered by the Regulatory Reform (Fire Safety) Order 2005 which means that a responsible person must take reasonable steps to reduce the risk from fire and make sure that people can safely escape if there is a fire. Although the Fire Safety Order does not apply to Crown premises, the prisons in the Service area have been included in this scenario due to their associated level of risk and demand. In Durham there are three prisons (HM Prison Frankland, HM Prison Durham and HM Prison Low Newton) and at Barnard Castle there is a Young Offenders Institution (HM Prison Deerbolt).

Other non-residential building fires can be either accidental or deliberate in their cause. In the three year reporting period from 1 April 2017 to 31 March 2020, the Service attended 587 other non-domestic building fires, with their causes shown below:

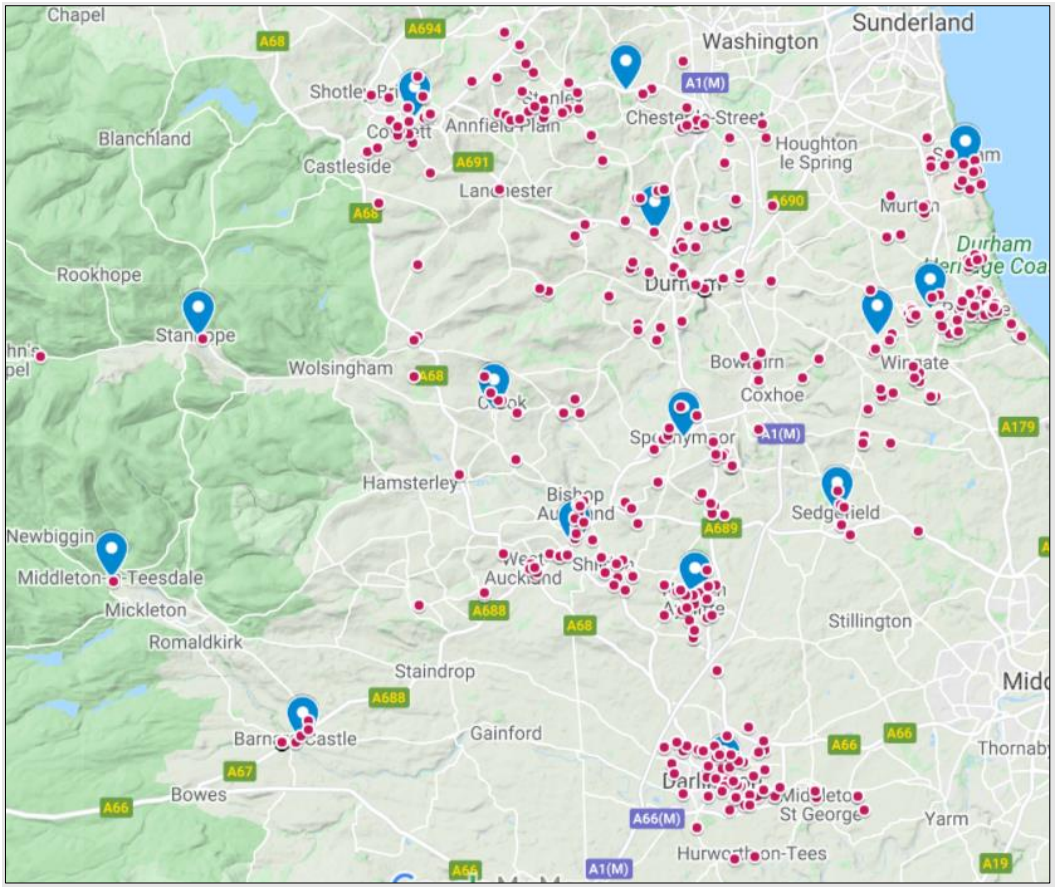
Cause of fire	Number of other non-residential building fires	Percentage
Accidental	268	45.7%
Deliberate - others property	188	32.0%
Deliberate - unknown owner	72	12.3%
Not known	35	6.0%
Deliberate - own property	24	4.1%
Total	587	100.0%

[Cause of other non-residential building fires]

The prevalence of other non-residential building fires throughout the Service area is shown below:

Station area	Number of other non-residential fires	Percentage
Peterlee	111	18.9%
Darlington	78	13.3%
Durham	78	13.3%
Bishop Auckland	53	9.0%
High Handenhold	47	8.0%
Consett	44	7.5%
Newton Aycliffe	43	7.3%
Barnard Castle	35	6.0%
Seaham	25	4.3%
Spennymoor	25	4.3%
Wheatley Hill	20	3.4%
Crook	14	2.4%
Sedgefield	8	1.4%
Stanhope	3	0.5%
Middleton-in-Teesdale	3	0.5%
Grand Total	587	100.0%

[Prevalence of other non-residential building fires]



[Locations of other non-residential building fires]

The majority of other non-residential building fires occur in premises such as other private non-residential buildings (18.2%), private garden sheds (15.3%), private garages (11.4%) or factories (4.1%), vehicle repair (2.2%) workshops or barns (3.7%).

The majority of fires in other non-residential buildings start in other external structures (40.3%), garages (10.9%), storerooms (8.9%), process or production rooms (4.9%) or kitchens (4.8%) and barns (4.8%).

Examples of fires in other non-residential buildings include a small fire in a charity dispatch centre supplying food, furniture, clothes and help to a national charity, detached garages containing cars completely destroyed by fire, sheds and garages, and fires in storage warehouses. Fires in prisons are usually deliberate, involving small amounts of paper or bedding with the majority of fire and smoke damage being limited to the item first ignited or the room of origin.

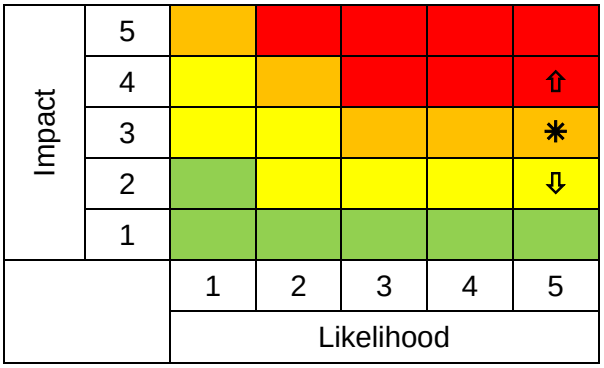
Based on historical precedent, statistical models, forecasts, and professional judgement, the reasonable worst case scenario for a non-residential building fire would be a fire in a factory or storage facility/warehouse. The fire would require several appliances and a significant period of time to extinguish and could have an impact on local travel and a harmful impact on the environment due to the composition of material involved. The potential loss of employment would have a negative impact on the local economy in the time taken for the business/warehouse to return to normal operation, and minor injuries may be experienced by employees or public.

The risk of fires in other non-residential buildings such as offices, shops, factories, warehouses, restaurants, public buildings, religious buildings is influenced by the inclusion of major fires within the National Risk Register (2020). Based on the distribution of fires in other non-residential buildings at the locations throughout the Service area, this risk is considered to be present in all station areas, to varying degrees. Due to the number of fires in other non-residential buildings, this risk is assessed with a moderate degree of confidence, where some areas of the assessment are significantly affected by uncertainty creating uncertainty bounds of up to +1 or -1 in the overall impact score.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Other non-residential building fires

2017/18		194
2018/19		208
2019/20		185
Three year total		587
Three year average		196
Risk assessment	Likelihood	5
	Impact	3



R4 Road vehicle fires

Road vehicle fires are a classification of primary fires and are fires in vehicles used for transportation on public roads, such as cars, vans, buses/coaches, motorcycles, lorries/HGVs etc. This category of fires does not include aircraft, boats or trains, which are categorised as other outdoor fires.

Road vehicle fires can either be accidental or deliberate in their cause. In the three year reporting period from 1 April 2017 to 31 March 2020, the Service attended 1302 road vehicle fires, with their causes shown below:

Cause of fire	Number of road vehicle fires	Percentage
Deliberate - others property	543	41.7%
Accidental	363	27.9%
Deliberate - unknown owner	317	24.3%
Not known	63	4.8%
Deliberate - own property	16	1.2%
Total	1302	100.0%

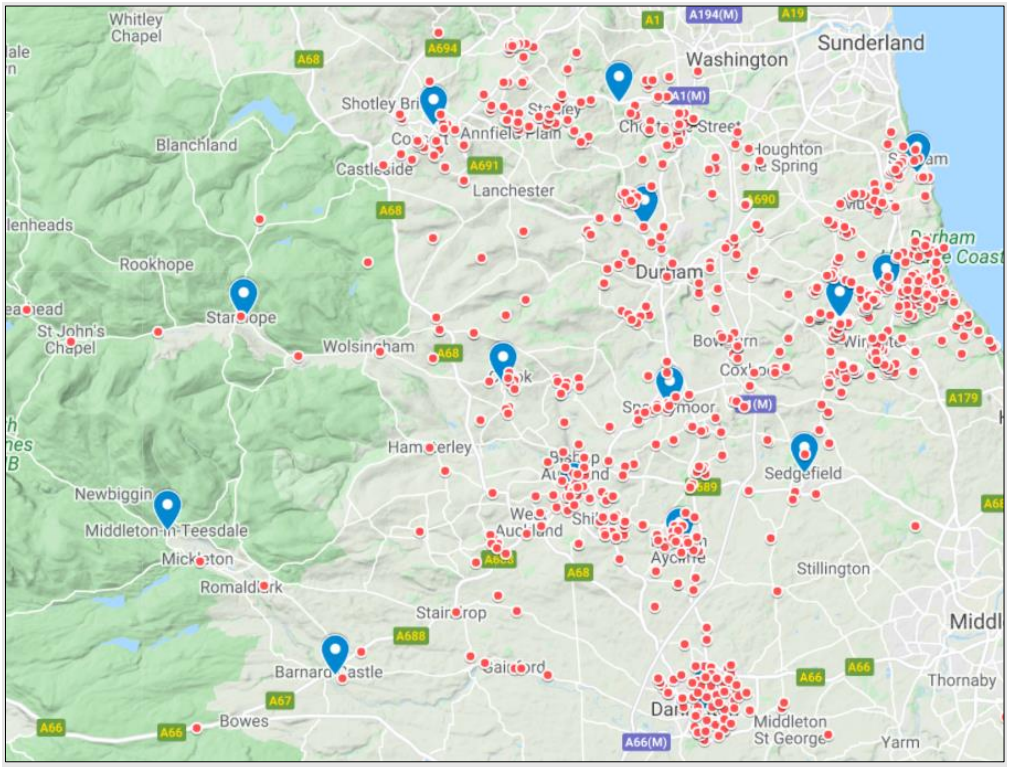
[Cause of road vehicle fires]

The prevalence of road vehicle fires is distributed throughout the Service area is shown below, with 49.3% of the total road vehicle fires occurring in the three station areas towards the east coast (Peterlee and Wheatley Hill, Seaham). In comparison, only 1.9% of the road vehicle fires occur in the three station areas to the west of the Service area (Barnard Castle, Stanhope and Middleton-in-Teesdale).

Station area	Number of vehicle fires	Percentage
Peterlee	356	27.3%
Wheatley Hill	120	9.2%
Bishop Auckland	114	8.8%
Consett	113	8.7%
Darlington	112	8.6%
Durham	100	7.7%
High Handenhold	100	7.7%
Newton Aycliffe	72	5.5%
Spennymoor	64	4.9%
Seaham	62	4.8%
Crook	41	3.1%
Sedgefield	23	1.8%
Barnard Castle	14	1.1%
Stanhope	8	0.6%
Middleton-in-Tees	3	0.2%
Total	1302	100.0%

[Prevalence of road vehicle fires]

The individual locations of all road vehicle fires in the reporting period are shown below, with concentrated areas towards the east coast, Darlington, Bishop Auckland and Consett.



[Locations of road vehicle fires]

Although the majority of road vehicle fires are single cars, vans or motorcycles, there are many other types of road vehicles, as shown below:

Type of road vehicle	Number of road vehicle fires	Percentage
Car	853	65.5%
Van	145	11.1%
Motorcycle	76	5.8%
Multiple Vehicles	44	3.4%
Towing caravan elsewhere (not on tow)	37	2.8%
Lorry/HGV	37	2.8%
Agricultural	32	2.5%
Other	21	1.6%
Caravan unspecified	18	1.4%
Motor Home	10	0.8%
Bus/coach	10	0.8%
Trailers - Trailer unit (not attached to tractor)	9	0.7%
Minibus	6	0.5%
Caravan on tow	2	0.2%
Bicycle	2	0.2%
Total	1302	100.0%

[Types of road vehicle fires]

Data analysis shows that road vehicle fires start in various locations, as shown below:

Origin of fire	Number of fires	Percentage
Engine	457	35.1%
Driver/Passenger area	405	31.1%
Not known	202	15.5%
Other	73	5.6%
Wheels/Brakes	62	4.8%
Other inside/Cargo area	45	3.5%
Boot	30	2.3%
Fuel tank	28	2.2%
Total	1302	100.0%

[Origin of road vehicle fires]

The extent of damage caused by road vehicle fires can be significant, as shown below:

Extent of fire damage at the incident stop	Frequency of damage	Percentage
Whole vehicle	728	55.9%
Engine compartment	303	23.3%
Driver/Passenger compartment	182	14.0%
Separate luggage compartment of vehicle	39	3.0%
Wheels/Tyres/Brakes/Axles/Bearings	39	3.0%
Fuel tank	6	0.5%
Roof/Roof rack (exterior to vehicle)	5	0.4%
Grand Total	1302	100.0%

[Extent of fire damage at the incident stop]

Furthermore, only 46 (3.5%) of the vehicle fires were reported to the police, while 937 (74.7%) were not reported and 283 (27.1%) were unknown of being reported. Additionally, 278 (21.4%) of the road vehicles were abandoned, while 997 (76.6%) were not abandoned and 27 (2.1%) were unknown.

Based on historical and statistical data, with professional judgement, the reasonable worst case scenario for road vehicle fires would be a fire that involved multiple vehicles and required the attendance of several appliances to successfully extinguish the fire. This scenario could occur in a location with difficult access and limited water supplies and could take a significant time to extinguish. The fire could also have an impact on local transport routes due to closed roadways and impact on the local environment and the prosperity of affected locations. A variation of this scenario would be the chronic nature of repetitive attendance at vehicle fires that have a negative impact on Service resources and the availability of crews to deliver proactive prevention and protection activities.

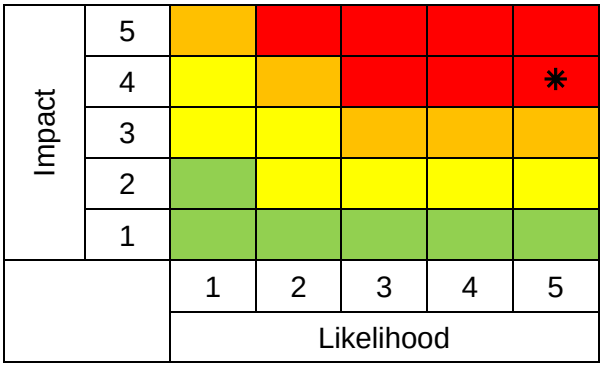
This risk is not influenced by either the National Risk Register (2020) or the County Durham and Darlington Local Resilience Forum Community Risk Register. Based on the distribution of road vehicle fires at all the locations throughout the Service area, this risk is considered to be present in all station areas, to varying degrees. Due to the number of road vehicle fires during the reporting period, the dwelling fire risk is assessed with a high degree of

confidence, where very few areas of the assessment are significantly affected by uncertainty.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Road vehicle fires

2017/18		453
2018/19		416
2019/20		433
Three year total		1302
Three year average		434
Risk assessment	Likelihood	5
	Impact	4



R5 Other outdoor fires

Other outdoors fires are fires in either primary outdoor locations (that is, aircraft, boats, trains and outdoor structures such as post or telephone boxes, bridges, tunnels etc.), or fires in non-primary outdoor locations that have casualties or five or more pumping appliances attending.

Other outdoor fires can be either accidental or deliberate in their cause. In the three year reporting period from 1 April 2017 to 31 March 2020, the Service attended 111 other outdoor fires, with their causes shown below:

Cause of fire	Number of other outdoor fires	Percentage
Deliberate - others property	47	42.3%
Accidental	37	33.3%
Deliberate - unknown owner	13	11.7%
Not known	9	8.1%
Deliberate - own property	5	4.5%
Total	111	100.0%

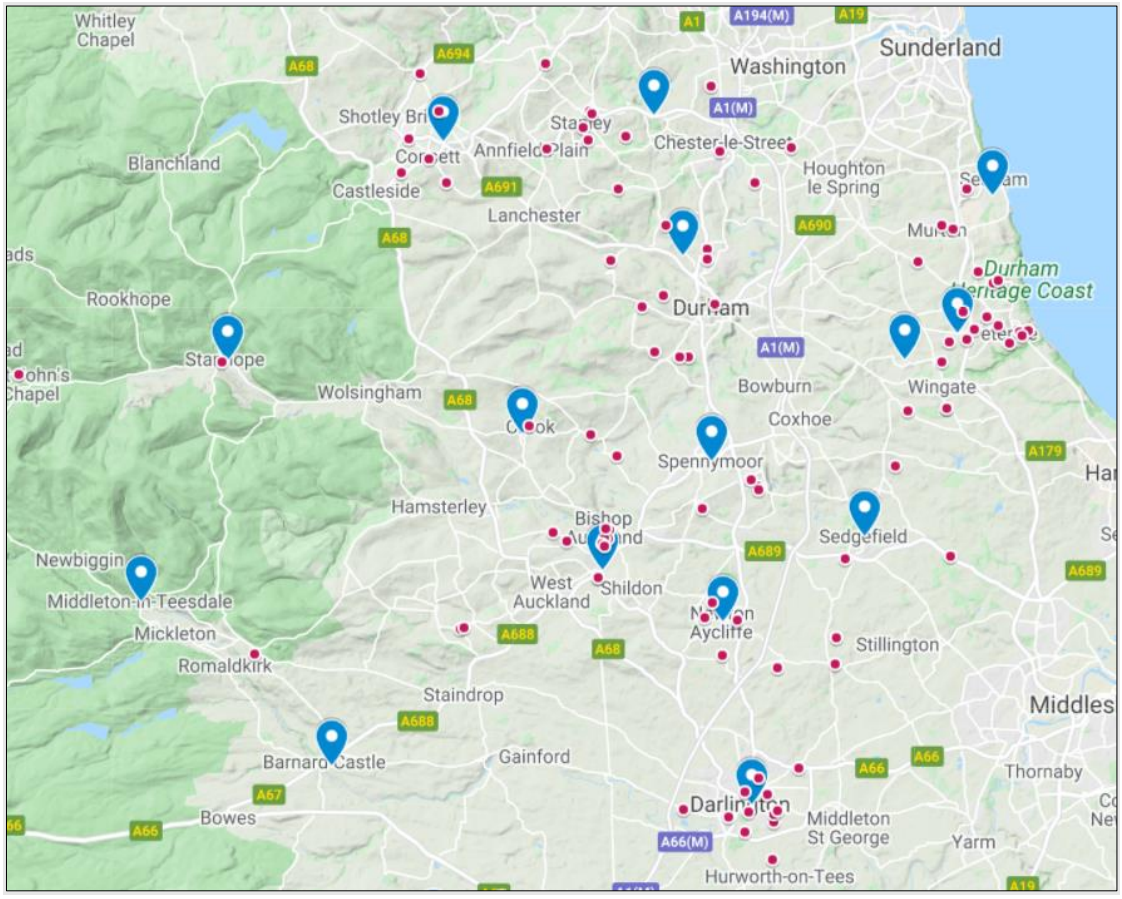
[Causes of other outdoor fires]

The prevalence of other outdoor fires throughout the Service area is shown below:

Station area	Number of other outdoor fires	Percentage
Peterlee	18	16.2%
Bishop Auckland	14	12.6%
Darlington	13	11.7%
High Handenhold	13	11.7%
Durham	11	9.9%
Consett	9	8.1%
Newton Aycliffe	7	6.3%
Seaham	6	5.4%
Spennymoor	6	5.4%
Crook	5	4.5%
Sedgefield	4	3.6%
Stanhope	2	1.8%
Wheatley Hill	2	1.8%
Barnard Castle	1	0.9%
Total	111	100.0%

[Prevalence of other outdoor fires]

The individual locations of the other outdoor fires in the reporting period are shown below, with concentrated areas around Darlington, Peterlee and Bishop Auckland.



[Locations of other outdoor fires]

The classification of other outdoor primary fires is a broad category and contains many possible property types

Type of other outdoor property fire	Number of fires	Percentage
Outdoor storage	51	45.9%
Other outdoor structures	18	16.2%
Other outdoor equipment/machinery	14	12.6%
Garden equipment	7	6.3%
Recycling collection point, bottle bank	5	4.5%
Shelter	5	4.5%
Agricultural equipment	4	3.6%
Camping tent	2	1.8%
Tunnel, subway	1	0.9%
Telephone box	1	0.9%
Wheelie Bin	1	0.9%
Post box	1	0.9%
Bridge	1	0.9%
Total	111	100.0%

[Types of other outdoor fires]

Examples of other outdoor fires include garden heaters too close to decking areas that cause fire damage due to radiant heat, fires in clothing recycle skips/containers, fires in ISO storage containers, a fire in a wind turbine and fires in school outhouse sheds containing sports equipment. In 7.2% of the other outdoor fires there was no damage caused as a result of the fire and in 42.3% of the fires there was up to 5 m^2 of damage caused.

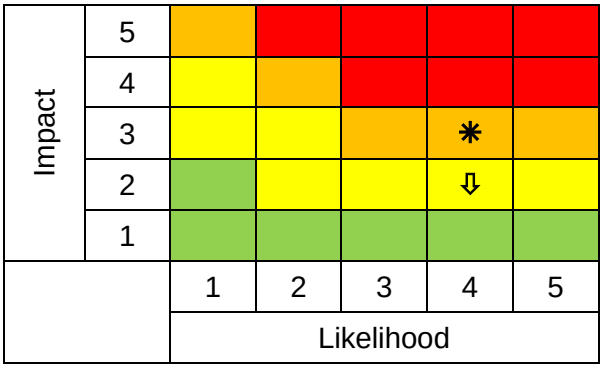
Based on historical and statistical data, with professional judgement, the reasonable worst case scenario for other outdoor fires would be a fire in a scrap yard where flammable materials were illegally stored within containers and their contents were not known to operational crews. Fire spread would impact on the flammable materials to exacerbate the fire, requiring the attendance of several fire appliances and partner agencies to manage the incident effectively. As a result of the fire there would be a negative impact on the environment due to the composition of materials involved and a negative impact on the local economy due to the short term loss of business/productivity. There could also be minor injuries due to the hostile working environment and rapid fire spread.

This risk is not influenced by either the National Risk Register (2020) or the County Durham and Darlington Local Resilience Forum Community Risk Register. Based on the distribution of other outdoor fires at all the locations throughout the Service area, this risk is considered to be present in all station areas, with the exception of Middleton-in-Teesdale, to varying degrees. Due to the high number of incident types within this classification of primary fire, the outdoor fire risk is assessed with a moderate degree of confidence, where some areas of the assessment are significantly affected by uncertainty creating uncertainty bounds of up to +1 or -1 in the overall impact score.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Other outdoor fires

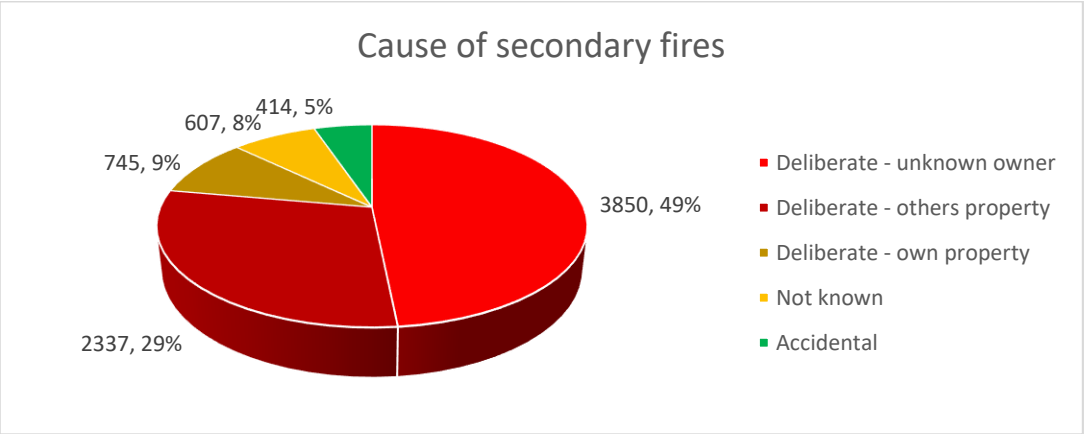
2017/18		31
2018/19		33
2019/20		36
Three year total		111
Three year average		37
Risk assessment	Likelihood	4
	Impact	3



R6 Secondary fires

Secondary fires are generally outdoor fires, not involving people or property. These include refuse fires, grassland fires and fires in derelict buildings or vehicles, unless these fires involve casualties or rescues, or five or more pumping appliances attend, in which case they become primary fires.

Secondary fires can be accidental or deliberate (or not known), and in the three year reporting period from 1 April 2017 to 31 March 2020, the Service attended 7953 secondary fires, with their causes shown below:



[Cause of secondary fires]

There is a significant variation in the prevalence of secondary fires throughout the Service area, with the three stations towards the east coast (Peterlee, Seaham and Wheatley Hill) accounting for 29.3% of the total secondary fires, while the three stations towards the west of the Service area (Barnard Castle, Stanhope and Middleton-in-Teesdale) accounting for only 0.9% of the total secondary fires.

Station area	Number of total secondary fires	Percentage
Peterlee	1541	19.4%
Darlington	1336	16.8%
Bishop Auckland	896	11.3%
High Handenhold	873	11.0%
Durham	751	9.4%
Consett	599	7.5%
Seaham	500	6.3%
Newton Aycliffe	486	6.1%
Spennymoor	336	4.2%
Wheatley Hill	289	3.6%
Crook	238	3.0%
Sedgefield	42	0.5%
Barnard Castle	37	0.5%
Stanhope	24	0.3%
Middleton-in-Tees	5	0.1%
Total	7953	100.0%

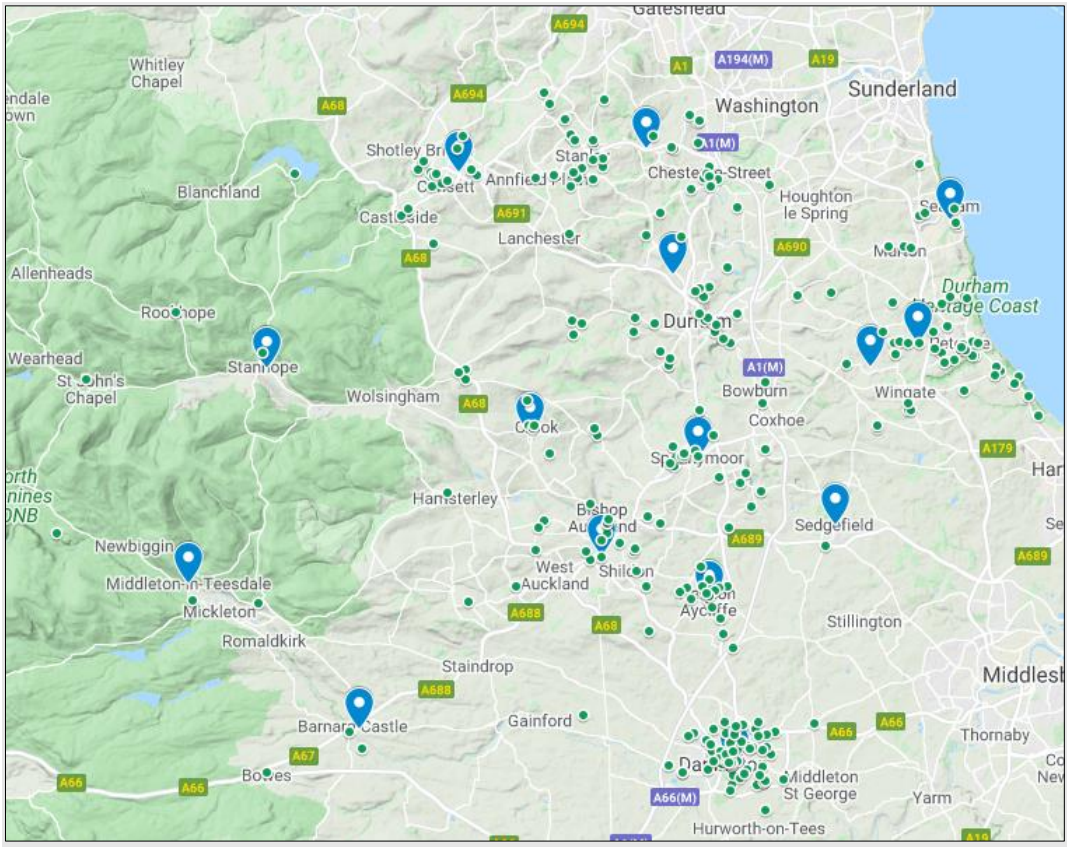
[Prevalence of secondary fires throughout the Service area]

Furthermore, analysis of secondary fire data, identifies the station areas where individual causes of secondary fires are more prevalent. Accidental secondary fires occurred at each of the 15 stations within the Service area, as shown below:

Station area	Number of accidental secondary fires	Percentage
Darlington	88	21.3%
Peterlee	51	12.3%
High Handenhold	49	11.8%
Consett	47	11.4%
Durham	35	8.5%
Newton Aycliffe	31	7.5%
Bishop Auckland	27	6.5%
Spennymoor	23	5.6%
Crook	22	5.3%
Seaham	15	3.6%
Stanhope	8	1.9%
Wheatley Hill	6	1.4%
Barnard Castle	6	1.4%
Middleton-in-Tees	4	1.0%
Sedgefield	2	0.5%
Total	414	100.0%

[Accidental secondary fires]

Locations of accidental secondary fires



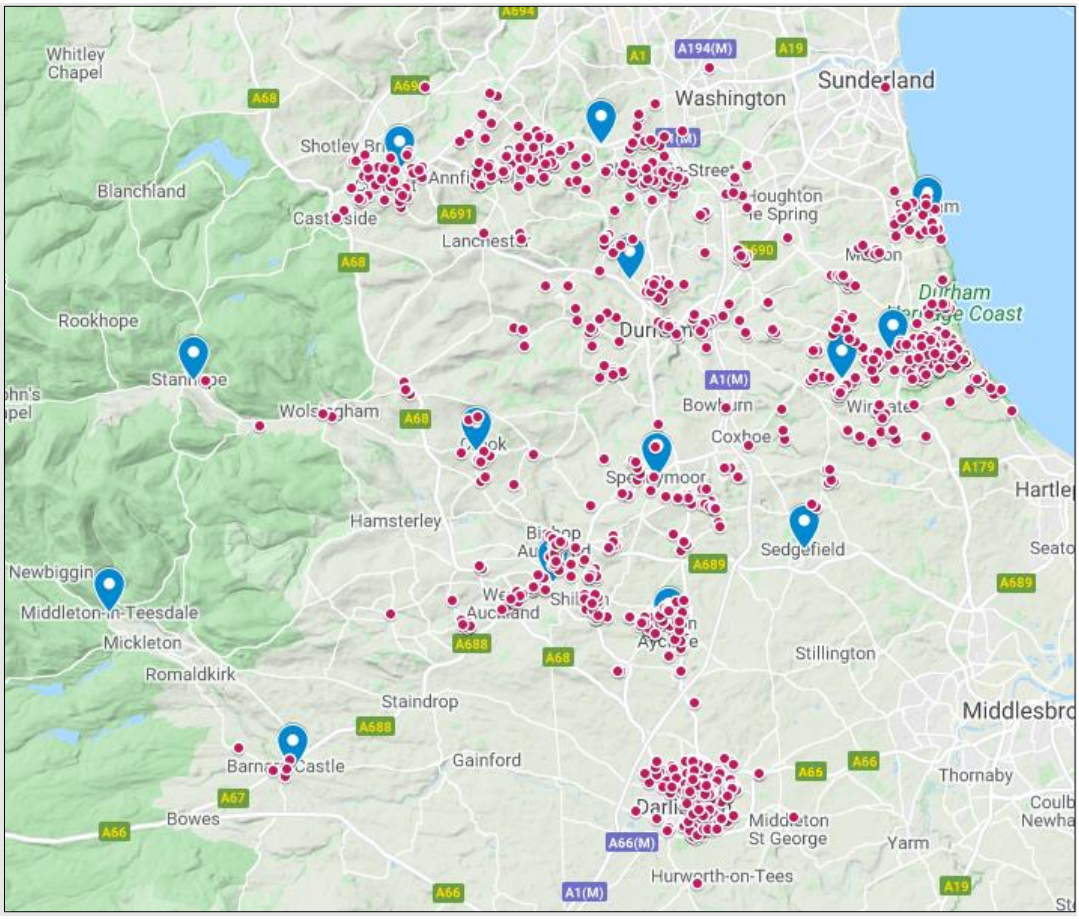
[Accidental secondary fires]

Deliberate secondary fires occurred at all the stations in the Service area, with the exception of Middleton-in-Teesdale, as shown below;

Station area	Number of deliberate secondary fires	Percentage
Peterlee	1462	21.1%
Darlington	1149	16.6%
Bishop Auckland	815	11.8%
High Handenhold	728	10.5%
Durham	593	8.6%
Consett	486	7.0%
Seaham	471	6.8%
Newton Aycliffe	408	5.9%
Spennymoor	290	4.2%
Wheatley Hill	268	3.9%
Crook	197	2.8%
Sedgefield	29	0.4%
Barnard Castle	21	0.3%
Stanhope	15	0.2%
Total	6932	100.0%

[Deliberate secondary fires]

Locations of deliberate secondary fires (unknown owner, others property and own property)



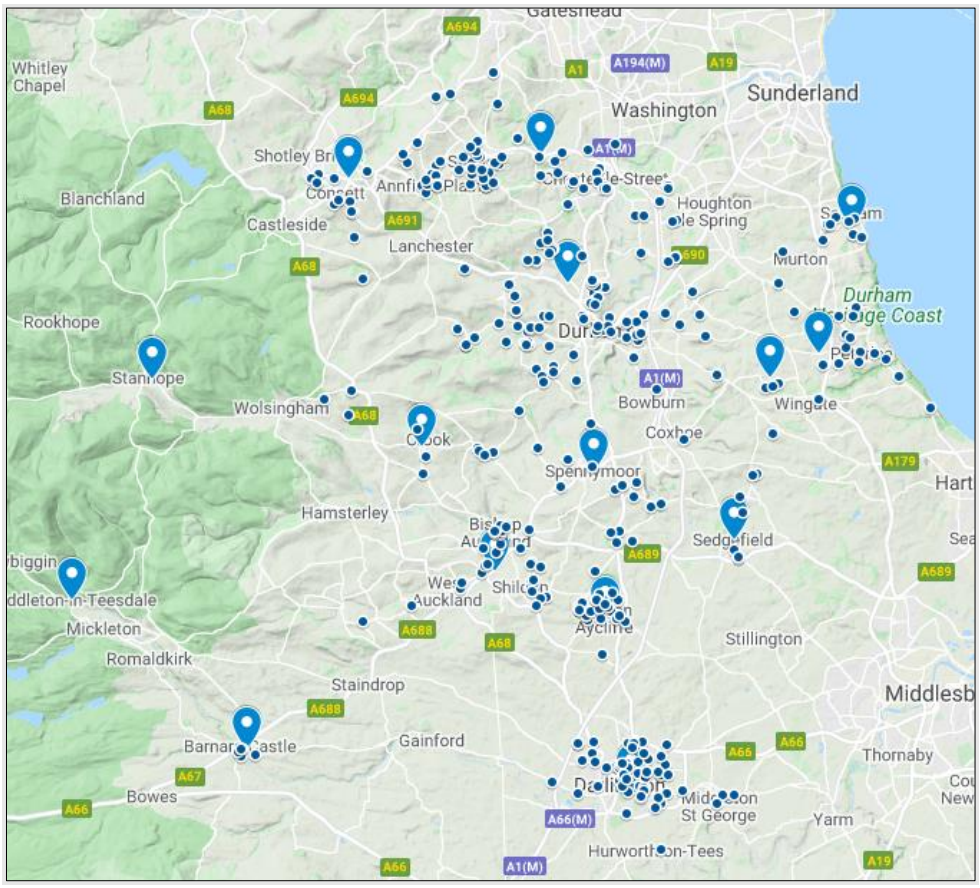
[Locations of deliberate secondary fires (unknown owner, others property and own property)]

Secondary fires with an unknown cause occurred at all the stations in the Service area and were distributed as shown below:

Station area	Number of unknown cause secondary fires	Percentage
Durham	123	20.3%
Darlington	99	16.3%
High Handenhold	96	15.8%
Consett	66	10.9%
Bishop Auckland	54	8.9%
Newton Aycliffe	47	7.7%
Peterlee	28	4.6%
Spennymoor	23	3.8%
Crook	19	3.1%
Wheatley Hill	15	2.5%
Seaham	14	2.3%
Sedgefield	11	1.8%
Barnard Castle	10	1.6%
Stanhope	1	0.2%
Middleton-in-Teesdale	1	0.2%
Total	607	100.0%

[Unknown cause secondary fires]

Locations of secondary fires with an unknown cause



[Locations of secondary fires with an unknown cause]

The type of materials involved in secondary fires is wide ranging, however, the most frequent secondary fires involve loose refuse (including garden refuse) (49.2%), scrub land (15.1%), tree scrub (6.6%), small refuse/rubbish/recycling containers (excluding wheelie bins) (5.7% and wheelie bins (5.2%). Other types of material involved in secondary fires are shown below:

Materials involved in secondary fires	Number of fires	Percentage
Loose refuse (incl in garden)	3911	49.2%
Scrub land	1203	15.1%
Tree scrub (includes single trees not in garden)	528	6.6%
Small /rubbish/recycle container (excl wheelie bin)	454	5.7%
Wheelie Bin	411	5.2%
Grassland, pasture, grazing etc	315	4.0%
Large refuse/rubbish container (e.g. skip)	118	1.5%
Private/Domestic garden/allotment	116	1.5%
Fence	101	1.3%
Roadside vegetation	94	1.2%
Hedge	90	1.1%
Other outdoor items including roadside furniture	68	0.9%
Straw/stubble burning	47	0.6%
Wasteland	37	0.5%
Heathland or moorland	33	0.4%
Other	427	5.4%
Total	7953	100%

[Materials involved in secondary fires]

The reasonable worst case scenario for this incident type would be a spate of refuse fires, grassland fires and/or fires in derelict buildings or vehicles which requires the attendance of numerous pumping appliances over an extended period of time. Due to the nature of the material involved in the fire, there may also be an adverse environmental impact from the products of combustion and contamination of the local area and/or equipment. The cumulative duration of time needed to extinguish the fires would also impact on the availability of appliances and require standby appliances to provide fire cover, leading to a wider impact on the resource availability to deliver prevention and protection activities. In this scenario, there would also be a negative reputational impact on the service due to the chronic and persistent nature of these fires and a regional/national perception of societal tolerance.

Data available from the Home Office (fire statistics data tables 0401 and 1401) enables the rate of deliberate outdoor fires (where the motive was either ‘thought to be’ or ‘suspected to be deliberate) per 100,000 people to be assessed. This assessment shows that the number of deliberate outdoor fires per 100,000 in England decreased to 94 in 2019/20, compared with 118 in 2018/19 and the longer term average of 132. In total, deliberate outdoor fires per 100,000 population declined in 37 fire and rescue services between 2018/19 and 2019/20, with some of the largest falls occurring in FRSs which historically have relatively high levels, however levels in County Durham and Darlington remain substantially above the longer term average. Comparison with other national fire and rescue services shows that the other

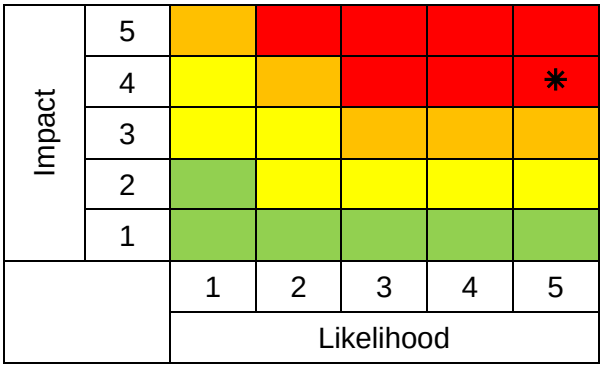
services in the North East region also recorded deliberate outdoor fires per 100,000 people above the five year average.

This risk is not influenced by either the National Risk Register (2020) or the County Durham and Darlington Local Resilience Forum Community Risk Register. Based on the distribution of secondary fires at all the locations throughout the Service area, this risk is considered to be present in all station areas, to varying degrees. Due to the number of secondary fires during the reporting period, the dwelling fire risk is assessed with a high degree of confidence, where very few areas of the assessment are significantly affected by uncertainty.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Secondary fires

2017/18		2646
2018/19		2915
2019/20		2392
Three year total		7953
Three year average		2651
Risk assessment	Likelihood	5
	Impact	4



R7 Wildfires

Wildfires, wildland fires or rural fires are unplanned, unwanted, and uncontrolled fires in an area of combustible vegetation starting in rural or urban areas. This risk is influenced by the National Risk Register (2020), where climate change, is described as leading to changes in the rainfall pattern that affects the UK and the increased likelihood of longer and drier summers leading to a risk of drought and more frequent and larger wildfires.

The national major fire risk describes a national scenario of a sustained and widespread wildfire close to major infrastructure or at an urban/rural interface with varying degrees of intensity and 'burn back' for a period of up to seven days, potentially impacting tourism and the environment. Although there have been other significant wildfires in other parts of the UK, where crews from CDDFRS have assisted the operational response to extinguish the fire, the frequency of wildfires within the service area is low.

In 2018, fire and rescue services dealt with a number of wildfires across the country. The vast majority of these were considered business as usual, although some larger incidents (including the Saddleworth Moor and Winter Hill fires) involved mutual aid from other services and the use of specialist capabilities such as high-volume pumps. Scotland also experiences large, rural wildfires, most recently seen in Dumfries and Galloway in 2020.

The west of the Service area is predominantly rural, consisting of open moorland and wooded river valleys, and is sparsely populated. Middle-in-Teesdale, Barnard Castle and Stanhope fire stations cover a large outlying area of small villages and communities. These remote rural areas comprise of the vegetation and environment that could support the development of a wildfire in the appropriate atmospheric conditions.

The reasonable worst case scenario for a wildfire incident in the Service area would be a protracted large fire in an urban area with difficult access and limited water supplies. This scenario would require numerous Service and other resources to extinguish the fire, with the use of national tactical advisors and appliances to support the management strategy to extinguish the fire. The wildfire would cause a significant impact on the availability of resources and have a negative impact on the local environment. In this scenario, it is unlikely that either any members of the public or firefighters would receive significant injuries, and only minor harms would be experienced.

The Met Office provides a Fire Severity Index for England and Wales, with information on the potential severity of wildfires. The Met Office's Fire Severity Index (FSI) is an assessment of how severe a fire could become if one were to start, however, it is not an assessment of the risk of wildfires occurring. The FSI shows the current day's fire severity and a forecast of likely fire severity over the coming five days. The index values are from 1 to 5, which represents an increasing degree of fire severity as follows:

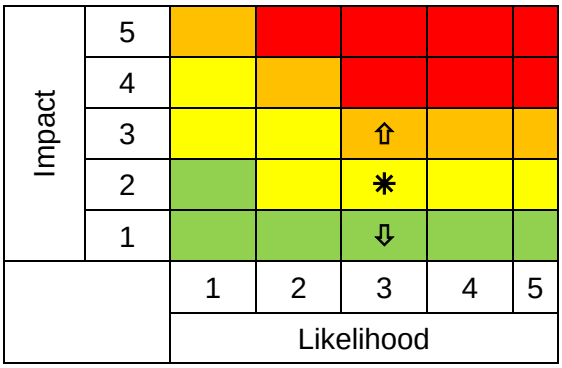
- FSI level 1 = low fire severity;
- FSI level 2 = moderate fire severity;
- FSI level 3 = high fire severity;
- FSI level 4 = very high fire severity;
- FSI level 5 = exceptional fire severity.

Based on the frequency and distribution of wildfires in the Service area, this risk is considered to be only present in the Barnard Castle, Middleton-in-Teesdale, Stanhope and Consett station areas. Due to the limited frequency of wildfires, this risk is assessed with moderate confidence as the full impact on the communities of County Durham and Darlington of a significant wildfire is currently unknown and some areas of the assessment are significantly affected by uncertainty creating uncertainty bounds of up to +1 or -1 in the overall impact score.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Wildfires

2017/18		6
2018/19		8
2019/20		2
Three year total		16
Three year average		5
Risk assessment	Likelihood	3
	Impact	2



R8 Rescues from water

The rivers, lakes and other areas of open water throughout the Service area present a risk when members of the public enter flowing or static water, get into difficulty and require to be rescued by fire and rescue service personnel. The River Wear, Gaunless, Browney, Tees and the River Skerne run through many of the station areas with many natural and man-made features creating hazards for individuals entering moving water.

The prevalence of incidents where rescues from water are completed is shown below, with most incidents in Durham, Bishop Auckland and Darlington requiring the rescue of persons in rivers or other moving water, or bankside where they may be partly in or out of the water. Incidents at Durham, Stanhope and Middleton-in-Teesdale have all involved persons on the roof of their vehicle that is surrounded by moving water and who need to be rescued.

Station area	Number of rescues from water	Percentage
Durham	23	45.1%
Darlington	12	23.5%
Bishop Auckland	6	11.8%
Barnard Castle	2	3.9%
Middleton-in-Teesdale	2	3.9%
High Handenhold	2	3.9%
Stanhope	1	2.0%
Spennymoor	1	2.0%
Crook	1	2.0%
Seaham	1	2.0%
Total	51	100%

[Prevalence of rescues from water within the Service area]

Examples of rescues from water include youths camping on a river island overnight and who became stranded due to rising water levels, people driving their vehicles through becks and fords who need to be rescued, and individuals entering rivers for social or sports activities and then are unable to recover themselves to a place of safety and then need to be rescued.

Based on the historical precedents, statistical analysis and professional judgement, the reasonable worst case scenario for rescues from water would be an incident where an individual (or a small group of people) entered the water for social activities, and were unable to recover themselves from the water. The incident would occur in a remote location with difficult access and could result in the loss of life to members of the public. This scenario would require the attendance of specialist resources to carry out time critical safe and effective rescues.

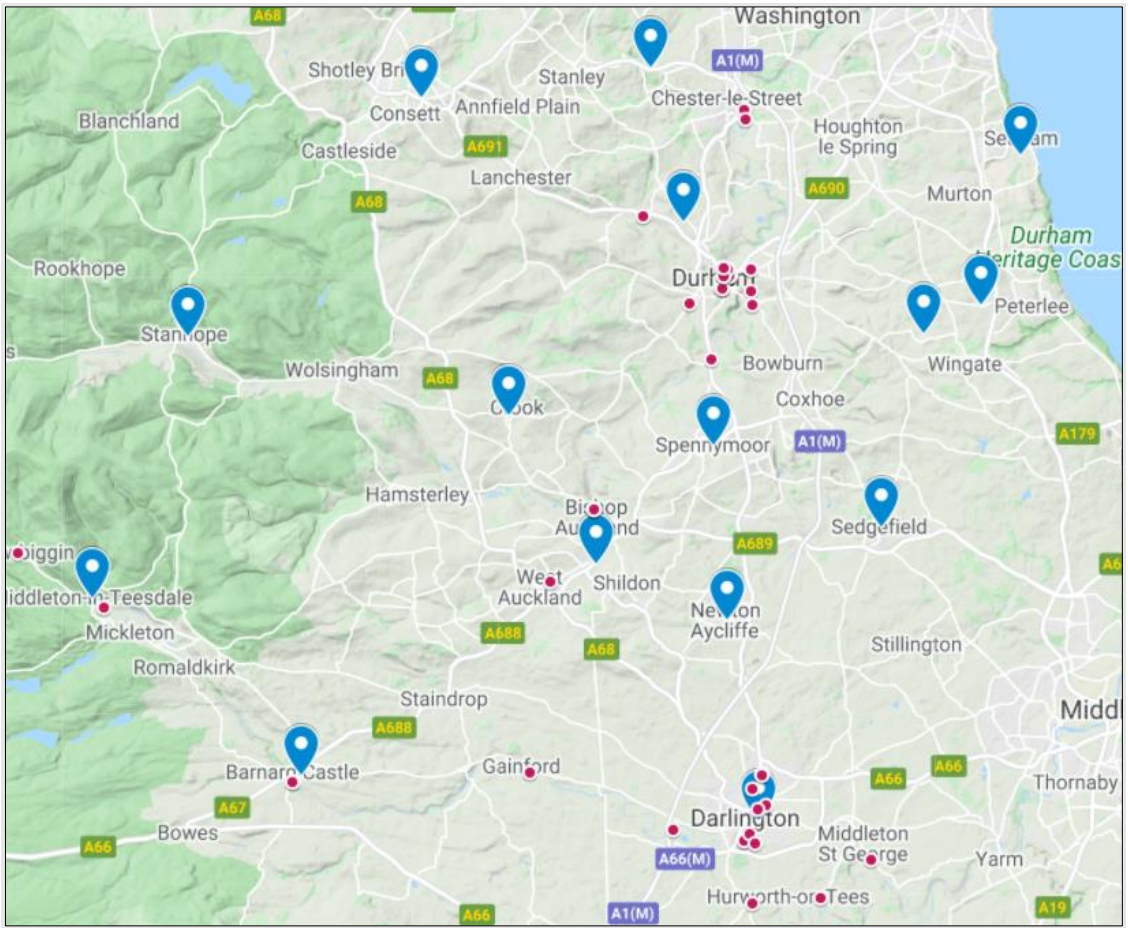
Rescues from water are not included in either the National Security Risk Assessment or the or the County Durham and Darlington Local Resilience Forum Community Risk Register and due to the frequency and impact of previous incidents in the reporting period, this risk scenario is only considered appropriate for the limited number of stations listed above.

The types of rescues from water during the reporting period are shown below:

Rescue from water incident types	Number	Percentage
Person in river, estuary or other waterway (moving water).	22	43.1%
Bankside, partly in or out of water.	5	9.8%
Threat of/attempted suicide	4	7.8%
Other	4	7.8%
Domestic e.g. Cat, Dog, Rodents, Horse, Bird, etc.	4	7.8%
Assistance to other agencies	3	5.9%
Person in/on top of vehicle surrounded by moving/rising water	3	5.9%
Suicide	1	2.0%
Other	5	10%
Total	51	100.0%

[Rescues from water incident types]

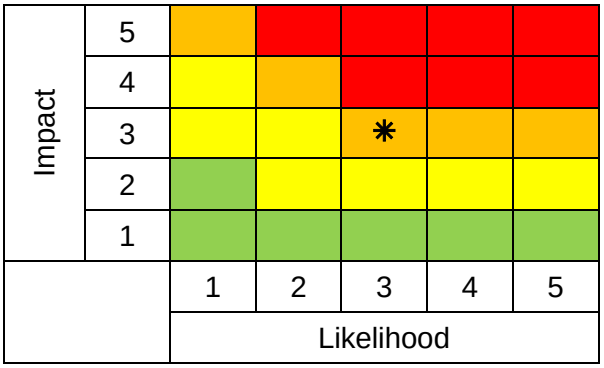
The locations of the rescues from water during the reporting period are shown below:



[Locations of rescues from water during the reporting period]

Risk assessment: Rescues from water

2017/18		14
2018/19		16
2019/20		21
Three year total		51
Three year average		17
Risk assessment	Likelihood	3
	Impact	3



R9 Rescues from height

Height related scenarios describe any work activity where there is a possibility that a fall from a distance that is liable to cause an injury could occur at any place, either at, or below ground level. This includes work above ground/floor level and areas where falls could occur from an edge or through an opening or fragile surface or falls from ground level into an opening in a floor or a hole in the ground. Height related scenarios can occur in a broad range of environments, including above and below ground level, industrial sites, buildings and dwellings (including buildings under construction), open structures and natural environments (such as steep ground, rock faces, excavations or sink holes).

The geographic area of the Service includes the coastline to the east, and fells and dales in the rural areas to the west, which both present a broad range of scenarios where people may become stranded and require to be rescued from an unsafe height related environment.

Station area	Number of rescues from height	Percentage
Darlington	9	21.4%
Durham	7	16.7%
Seaham	5	11.9%
Newton Aycliffe	5	11.9%
High Handenhold	3	7.1%
Peterlee	3	7.1%
Bishop Auckland	3	7.1%
Consett	3	7.1%
Spennymoor	2	4.8%
Wheatley Hill	1	2.4%
Sedgefield	1	2.4%
Total	42	100.0%

[prevalence of rescues from water within the Station area]

The range of incidents in the three year reporting period from 2017/18 to 2019/20 include the rescues of people who climbed onto rooftops and couldn't gain access back to ground level, youths climbing on roofs that need to be rescued, people stranded in defective cherry pickers and children stuck in trees. The locations of these incidents include outdoor structures such as bridges, pylons, cranes or ledges. Incidents that involve the rescue of people from below ground include individuals that have fallen into garage inspection pits.

The service has three levels of working at height response. All emergency response staff are trained to the minimum of level one safe working at height techniques using work restraint, fall arrest and life lining. Staff at Durham and Consett are trained to level two to enable personnel to provide a limited first strike capability for the purposes of firefighter and casualty stabilisation and recovery, walking wounded recovery and casualty stabilisation. This equipment can also be used for confined space work. Staff at Newton Aycliffe and Seaham are trained to level three, with more advanced rope access equipment and advanced training to enable personnel to provide a full technical rescue including the capability of self-lowering/raising level three operators and casualty, extra equipment to assist cliff and confined space rescues. Further assistance is also available from Cleveland Fire Brigade, Tyne and Wear Fire and Rescue Service and Tees & Wear Search and Mountain Rescue in

the event of the CDDFRS level three team being unavailable or additional support is required for a larger or more complex incident.

The types of rescues from height during the reporting period are shown below:

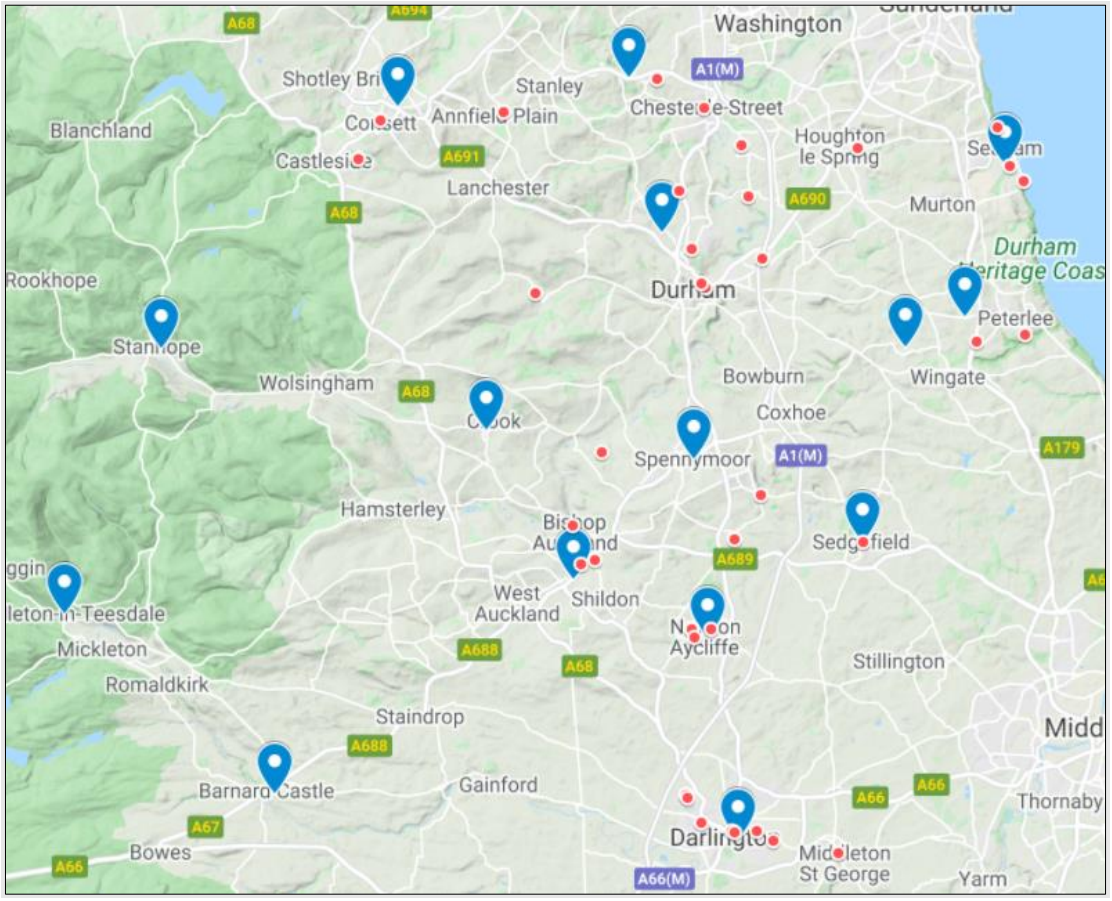
Incident type of rescue from height	Number of incidents	Percentage
From height e.g. pylon crane, roof or ledge.	19	45.2%
Threat of/attempted suicide	7	16.7%
Service not required	5	11.9%
Domestic e.g. Cat, Dog, Rodents, Horse, Bird, etc.	4	9.5%
Assistance to other agencies	3	7.1%
Other	2	4.8%
Removal/retrieval of dead body	1	2.4%
Suicide	1	2.4%
Total	42	100.0%

[Rescues from height incident types]

As shown below, the locations of the height related incidents are widespread, with some occurring near the coastline and others in the towns and villages across the service area. The stations in the west of the county, Barnard Castle, Middleton-in-Teesdale and Stanhope experience very few height related incidents.

Based on historical and statistical data, and with professional judgement, the reasonable worst case scenario for a rescue from height would be an incident where a member of the public came into difficulty and required to be rescued from a ledge, embankment or a crag/cliff. The member of the public may have sustained minor injuries and would require medical assistance at the scene of the rescue which may be time critical due to limited daylight or the nature of any injuries. The incident would be resolved by staff with more advanced rope access equipment and advanced training.

The locations of the rescues from height during the reporting period are shown below:



[Locations of rescues from height during the reporting period]

Risk assessment: height related incidents

2017/18		11
2018/19		22
2019/20		9
Three year total		42
Three year average		14
Risk assessment	Likelihood	3
	Impact	2

Impact						
	5					
	4					
	3					
	2			*		
	1					
		1	2	3	4	5
		Likelihood				

R10 Road traffic collisions (RTC)

Road Traffic Collisions (RTCs) are the non-fire incidents that require the attendance of the Service for collisions involving large and small vehicles road vehicles, including motorbikes. RTCs are the most frequently attended non-fire incident by fire and rescue services. The Service has a statutory duty from the Fire and Rescue Services Act to rescue people and protect them from serious harm in the event of road traffic collisions within their area

The Service covers an area of 939 m^2 with a high number of B, C, and unclassified roads towards the west, with A class roads linking the main towns in County Durham and Darlington. The A1(M) motorway runs through the Service area and passes through Darlington, Newton Aycliffe, Sedgefield, Spennymoor, Durham and High Handenhold station areas.

Data supplied by the Traffic Accident Data Unit and available through the North East England Road User Casualty Dashboard describes the following key themes within the reporting period:

- While the numbers of slight injuries are decreasing for all road users, the number of serious and fatalities is increasing;
- Of all road users the greatest number of fatalities were to pedestrians (19) and car occupants (17), motorcyclists (8) and pedal cyclists (4);
- The most severe injuries occurred to car occupants (328), pedestrians (159), motorcyclists (138) and pedal cyclists (57);
- Minor injuries occurred to car occupants (2,233), pedestrians (379), pedal cyclists (217), bus drivers (141), motorcyclists (130) and occupants of heavy good vehicles (131);
- Most fatalities (9) and slight injuries (396) occur in the 26 – 30 age group, while most serious injuries occur in the 16 – 20 age group.

RTCs are prevalent at all the station areas at the frequency shown below:

Station area	Number of RTCs	Percentage
Darlington	158	16.2%
Durham	136	13.9%
High Handenhold	99	10.1%
Consett	93	9.5%
Peterlee	92	9.4%
Newton Aycliffe	87	8.9%
Bishop Auckland	76	7.8%
Seaham	49	5.0%
Spennymoor	47	4.8%
Crook	35	3.6%
Sedgefield	33	3.4%
Barnard Castle	26	2.7%
Wheatley Hill	22	2.2%
Stanhope	16	1.6%
Middleton-in-Teesdale	9	0.9%
Total	978	100.0%

[Prevalence of RTCs throughout the Service area]

The range of activities carried out by operational crews can vary depending on the extent of the collision and the nature of the injuries sustained to the driver and passenger(s). The range of activities carried out by crews at RTCs during the reporting period is shown below:

Activity at RTCS attended	Frequency of activities	Percentage
Make vehicle safe	323	33.0%
Extrication of person/s	231	23.6%
Make scene safe	125	12.8%
Medical assistance only	92	9.4%
Release of person/s	66	6.7%
Stand by - no action	61	6.2%
Wash down road	44	4.5%
Advice only	29	3.0%
Other	7	0.7%
Total	978	100%

[Range of activities by operational crews at RTCs attended]

The types of RTCs attended during the reporting period involved the following obstructions and/or other road vehicles:

Types of vehicles involved in RTCs	Number of incidents	Percentage
Multiple Vehicles	497	50.8%
Car	422	43.1%
Van	18	1.8%
Motorcycle	13	1.3%
Lorry/HGV	10	1.0%
Highway/road surface/pavement	6	0.6%
All other obstructions/vehicles etc	12	1.4%
Total	978	100%

[Types of RTCs]

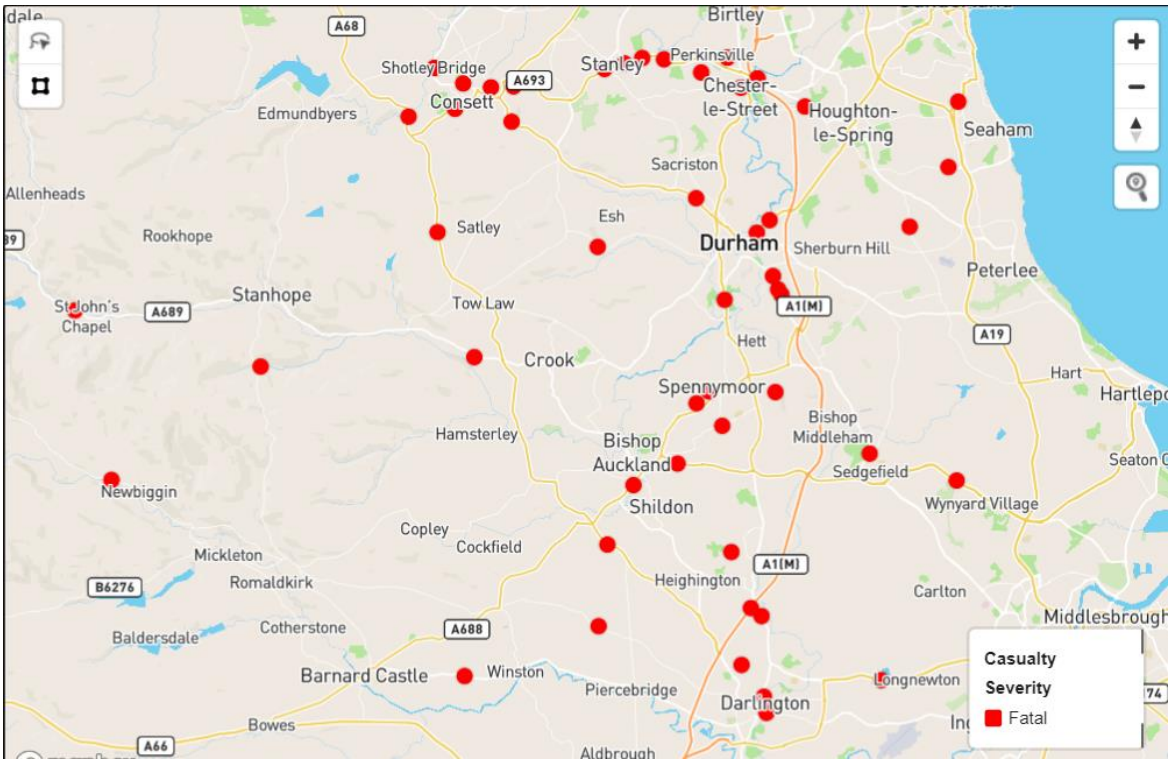
The majority (51.1%) of RTCs are managed by one appliance only, while 41.7% of the RTCs are managed by two appliances and on only 5.4% of the RTCs during the reporting period are three appliances required to rescue people and protect them following an RTC. On only two occasions (0.2%) were five appliances required to deal with an RTC.

When assessing the locations of the RTCs where fatalities, severe and slight injuries occur, the Fire Statistics Definitions published by the Home Office are used for clarity over the extent of injuries, where:

- Fatal can be as a direct or indirect result of an RTC;
- Hospital severe – at least an overnight stay in hospital as an in-patient;
- Hospital slight – attending hospital as an outpatient (not a precautionary check).

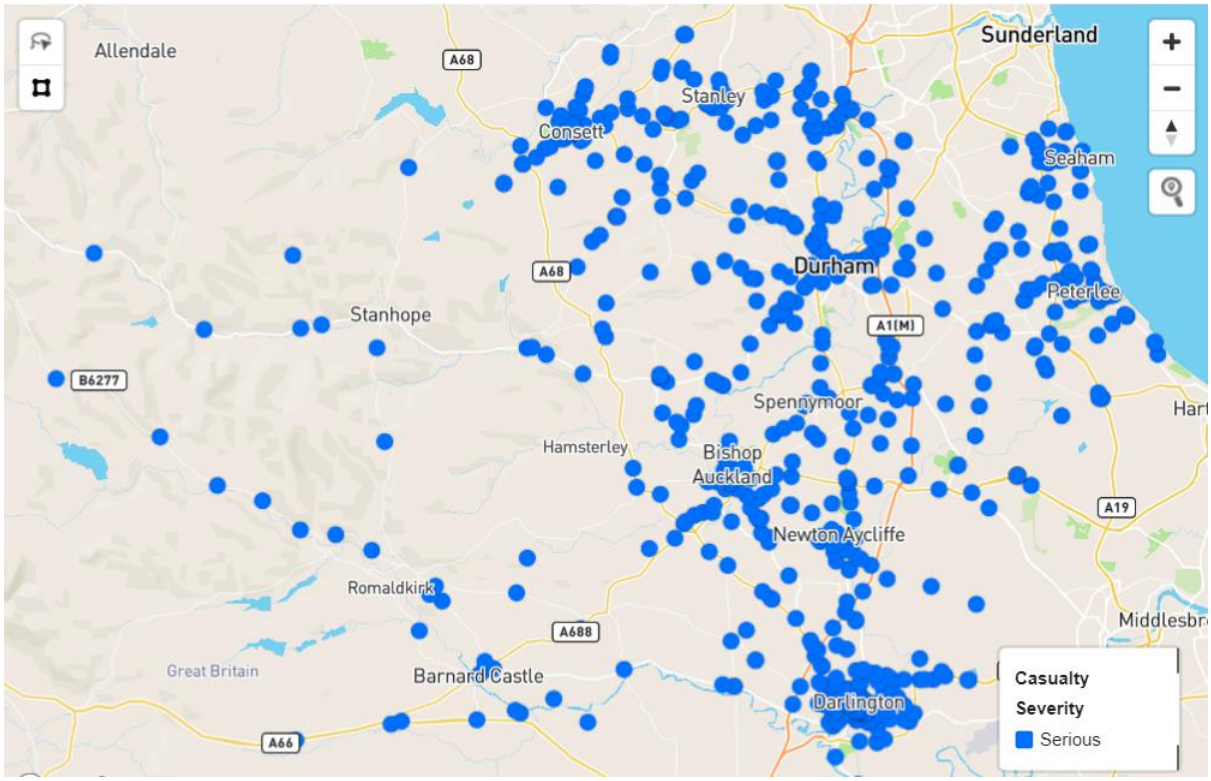
Analysis of the data available for the reporting period through the North East England Road User Casualty Dashboard shows that car occupants are the most likely to be killed in an RTC, followed by pedestrians, motorcyclists and cyclists. Children under 15 years are the most likely to be involved in RTCs as pedestrians.

The majority of fatal RTCs occur on the A class roads in the north of the Service area, around Consett and High Handenhold stations (A693), with other fatalities occurring on the road connecting Darlington, Bishop Auckland (A68), Spennymoor and Durham (A167). The locations of fatal RTC incidents is shown below:



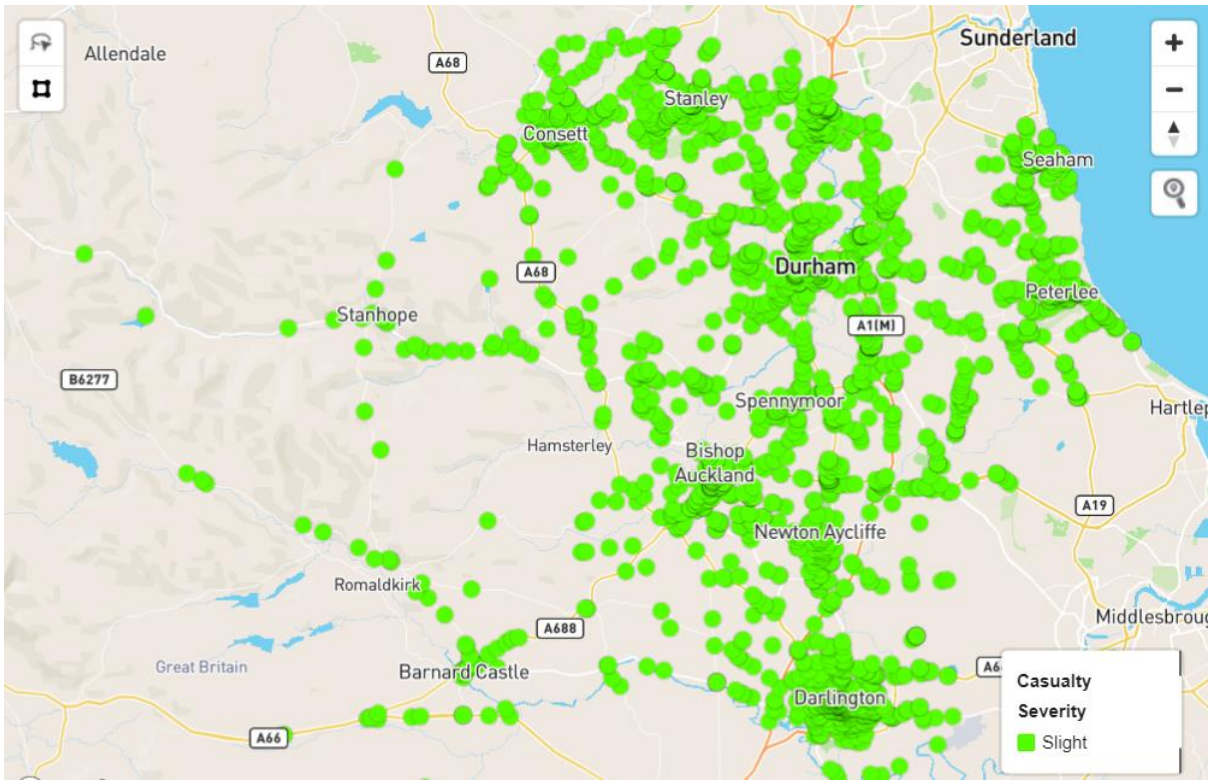
[Locations of RTCs where fatalities occur]

Most RTCs that result in serious injuries occur centrally within the Service area, between the A68 from Darlington to Consett and the A1(M) from Darlington to Chester-Le-Street, with less serious injuries from RTCs in the east and west.



[Locations of RTCs where serious injuries occur]

RTCs that result in slight injuries are more widespread throughout the Service area, with concentrated locations around the more densely populated station areas of Darlington, Bishop Auckland, Newton Aycliffe, Spennymoor, Durham, Consett, High Handenhold, Peterlee and Seaham



[Locations of RTCs where slight injuries occur]

Based on historical and statistical data, and with professional judgement, the reasonable worst case scenario for an RTC in the Service area would be a collision involving multiple vehicles in one of the busiest locations, which required the extrication of multiple casualties, with varying degrees of injury. This scenario could present difficult access for multiple emergency services due to the impact of the RTC on the road network and the time to complete any extrications would be protracted. Due to the potential leakage of vehicle fluids following an RTC in this scenario, there may be a negative impact on the environment and an extended period of time to resolve the incident may also negatively impact on the local economy.

Further information on the prevalence of road traffic collisions is available from North East England Road User Casualty Dashboard

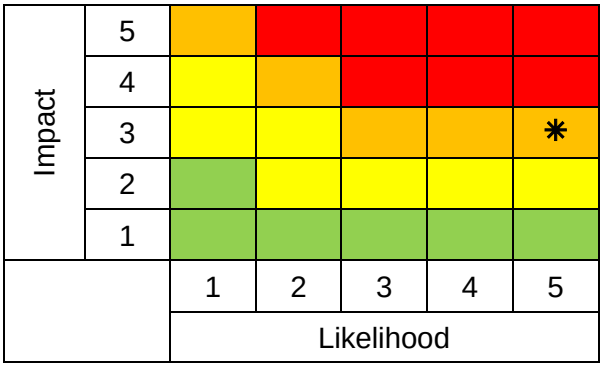
Major transport accidents, including transport by road, is included within the National Risk Register (2020 edition) where a major road traffic accident is described as being unlikely to warrant a co-ordinated national level response and would be managed by local authorities and emergency services. The risk of road traffic accidents is not included within the County Durham and Darlington Local Resilience Forum Community Risk Register. Based on the distribution of RTCs at all the locations throughout the Service area, this risk is considered to be present in all station areas, to varying degrees. Due to the number of RTCs during the

reporting period, the RTC risk is assessed with a high degree of confidence, where very few areas of the assessment are significantly affected by uncertainty.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: RTC

2017/18		326
2018/19		354
2019/20		298
Three year total		978
Three year average		326
Risk assessment	Likelihood	5
	Impact	3



R11 Rail incidents

The East Coast Main Line runs through the Service area, with stations at Darlington, Durham and Chester-le-Street, and there are other local railway lines and stations that present a risk of an adverse safety event requiring the attendance of fire and rescue resources.

Railways stations are located at the following locations in the Service area:

Train station	Station area
Durham	Durham
Darlington	Darlington
Chester-Le-Street	High Handenhold
Bishop Auckland	Bishop Auckland
Seaham	Seaham
Newton Aycliffe	Newton Aycliffe
Shildon	Bishop Auckland
Dinsdale	Darlington
North Road	Darlington
Heighington	Newton Aycliffe
Teesside Airport	Darlington
Horden	Peterlee

[Train stations in the Service area]

Although railway fires and accidents that require the attendance of the Service are rare, incidents have occurred in train stations and on the lines of the rail network. Some of the risks associated with railway incidents include moving trains, difficult access and egress, fuel and power systems, hazardous materials and carriage construction and contents.

Examples of rail related fires and accidents that have occurred in the station area include small fires in carriage heating systems or cooking facilities, slips, trips and falls by passengers while accessing a train and individuals who attempt to take their own life and require to be rescued by fire and rescue service personnel.

Based on historical and statistical data, with professional judgement, the reasonable worst case scenario for railway incident involving a fire or rescue would be a fire in a carriage that spread beyond the items first ignited. The accumulation of smoke within a carriage would require the train to be stopped at a station, or another accessible location, to allow for the fire to be extinguished. Limited access, other moving trains, fuel and overhead power lines would all present hazards to fire and rescue personnel and the closure of a local rail line could impact on the local economy if trains were unable to run for any significant period of time.

All railways accidents, including fires and rescues, are investigated by the Railway Accident Investigation Branch with all reports available at: Rail Accident Investigation Branch reports.

Major transport accidents, including transport by rail, is included within the National Risk Register (2020 edition) where infrastructure improvements are described as having a substantial reduction in both the frequency and severity of rail derailments, thanks to: the introduction of automatic braking systems for trains, the roll-out of train protection warning systems, improvements in the management of lineside assets, and improvements to safety

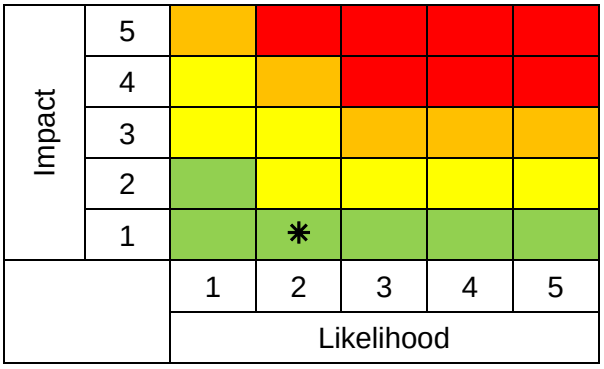
management systems. As a result of these improvements, 2018–19 was the twelfth consecutive year without any passenger fatalities. The risk of rail transport accidents is not included within the County Durham and Darlington Local Resilience Forum Community Risk Register.

Rail incidents have only occurred at a low number of locations, including; Durham (Croxdale), Darlington and Chester-Le-Street stations, and due to their low frequency, this scenario is assessed with low confidence. Due to the absence of any incidents at locations away from train stations, this risk is also only considered present at the station areas where the East Coast Main Line passes through and/or railway stations are located (Darlington, Newton Aycliffe, Spennymoor, Durham and High Handenhold).

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Rail incidents

2017/18		3
2018/19		0
2019/20		2
Three year total		5
Three year average		2
Risk assessment	Likelihood	2
	Impact	1



R12 Aircraft incidents

Incidents involving aircraft have the potential for catastrophic consequences, however, the number of worldwide air traffic fatalities has diminished significantly given that the volume of passenger air traffic has increased by more than 66 percent since 2004.

Air travel is statistically the safest form of transport as it is many thousands of times safer than the most dangerous form of travel (motorcycle riding) and the majority of aircraft incidents relate to smaller aircraft such as microlights and gliders.

Within the service area Teesside International Airport is located on the outskirts of Darlington, near the village of Middleton St George. This airport allows flights for the public transport of passengers and for flying instruction. There are also other smaller category airfields located at Fishburn Wheatley Hill and Peterlee (Shotton). Fishburn airfield is an unlicensed grass flying strip close to the town of Sedgefield, Wheatley Hill is a small microlight club and airfield, and Shotton is primarily a parachuting site.

Teesside International Airport is a firefighting category six airport, with the maximum length of aircraft that can land between 28m and 39m and a maximum fuselage width of 5m. Aircraft incidents that occur within the airport boundary are the responsibility of the airport firefighting crews, while incidents that occur outside the airport boundary are the responsibility of the local authority fire and rescue service. The airport rescue and firefighting services will also respond to off-airport incidents that fall within a 6-degree cone from the end of each runway. If a special request has been made by the local authority, then dependent on circumstances, major foam tenders may be dispatched.

The lengths of the runways at the airfields within the service area is shown below:

Airport/airfield	Runway length
Durham Tees Valley Airport	2291m
Fishburn	790m
Shotton	304m and 237m (2 runways)
Wheatley Hill	540m

[Runway lengths of the airfields in the Service area]

Aviation accidents have caused the significant loss of life and have been major incidents in other locations, however, aircraft incidents in the service area historically only involve light aircraft, microlights or paragliders, and often only require limited action and result in minor injuries to pilots and/or passenger(s). .

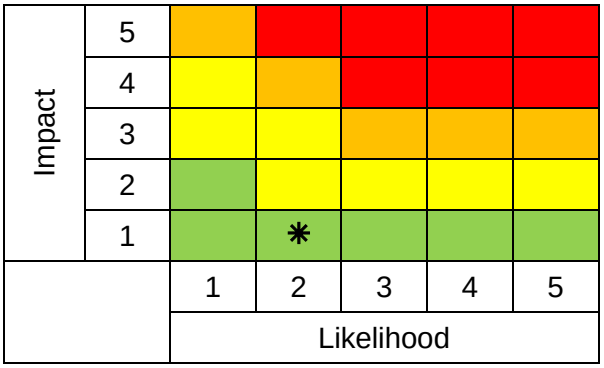
Based on historical and statistical data, with professional judgement, the reasonable worst case scenario for an incident involving aircraft would be a single engine aircraft with up to two souls on board, which, due to mechanical issues or hydraulic failures, was forced to land off the airfield. The incident would require the extrication of pilot and passenger(s) with minor injuries only. This scenario could also cause minor disruption to traffic and local transport routes. Based on the limited frequency of aircraft related incidents, this risk scenario is assessed with only a moderate level of confidence.

Aircraft related incidents are not included in either the National Security Risk Assessment or the County Durham and Darlington Local Resilience Forum Community Risk register and

due to the frequency and impact of previous incidents in the reporting period, this risk scenario is only considered present in the Darlington station area.

Risk assessment: Aircraft

2017/18		1
2018/19		2
2019/20		2
Three year total		5
Three year average		2
Risk assessment	Likelihood	2
	Impact	1



R13 Sea vessels

Incidents involving vessels in the marine and inland waterway environment are not commonplace for fire and rescue personnel; they can be complex to deal with, ranging from incidents involving small vessels to large sea-going vessels, and can include military vessels. The Service area includes 17 km of coastline in the Seaham station area, and the risk of a maritime related incident is part of the family of transport related risks with road, rail and air.

Vessels within Seaham harbour are the statutory responsibility of the Authority, while if a casualty vessel situated outside the area of statutory responsibility (i.e. off-shore) it must be recognised and it may come into the harbour and become a statutory responsibility of the fire authority.

A fire on a vessel is a hazard because of the way vessels are constructed, with difficult access and egress and the possibility of fire spreading beyond the compartment involved through conduction via metal bulkheads and air handling machinery. Some of the hazards associated with a maritime related incident include restricted access and egress, ineffective communications, fire and thermal radiation, flashover, backdraft and uncontrolled ventilation.

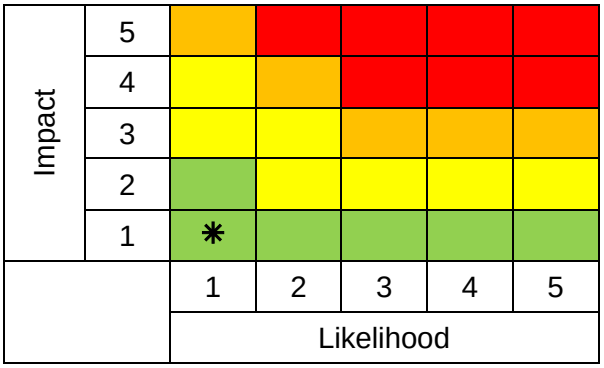
Although there have been no maritime related transport incidents within the reporting period, based on historical data and professional judgement, the reasonable worst case scenario for a fire on board a vessel would be a fire in a container or any other part of the ship that required the operation of the ships on board firefighting systems. The fire would require crews to access the vessel and carry out firefighting operations to resolve the incident and mitigate further fire and smoke damage.

Major transport accidents, including transport by sea is included within the National Risk Register (2020 edition) where the last major accident on a UK-flagged ship at sea is described as the Herald of Free Enterprise which capsized in March 1987 shortly after leaving Zeebrugge en route to Dover. There were 193 fatalities. On inland waterways, the collision between the Marchioness and the Bowbelle in August 1989 on the Thames resulted in 51 fatalities. The risk of maritime accidents is not included within the County Durham and Darlington Local Resilience Forum Community Risk Register. Maritime incidents are rare and would only occur in the Seaham station area, and due to their scarcity, this scenario is assessed with low confidence.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Sea vessels

2017/18		0
2018/19		0
2019/20		0
Three year total		0
Three year average		0
Risk assessment	Likelihood	1
	Impact	1



R14 Flooding

The risk of flooding within the Service area is described within both the National Risk Register and the County Durham and Darlington Local Resilience Forum Community Risk Register. Wide area flooding may occur from a range of different circumstances and may be fluvial (in close proximity to rivers), surface water (following exceptional heavy periods of rainfall when the local environment can't transport the water away fast enough) and coastal (where high tides, storm surges and offshore waves from low pressure weather systems lead to coastal flooding).

Wide area flooding is rare, and a variation to this risk are relatively minor involving domestic water supplies where advice is given, or where the incident is made safe by isolating water supplies, or where appliance pumps are used to remove water from properties.

The prevalence of flooding related incidents throughout the service area are shown below

Station area	Number of flooding related incidents	Percentage
Darlington	42	14.5%
Durham	42	14.5%
Bishop Auckland	38	13.1%
Peterlee	35	12.1%
Consett	31	10.7%
Spennymoor	21	7.3%
High Handenhold	18	6.2%
Newton Aycliffe	11	3.8%
Seaham	11	3.8%
Barnard Castle	9	3.1%
Stanhope	8	2.8%
Wheatley Hill	8	2.8%
Crook	6	2.1%
Sedgefield	5	1.7%
Middleton-in-Teesdale	4	1.4%
Total	289	100.0%

[Prevalence of flooding related incidents]

The majority of flooding related incidents involve houses of single occupancy (55%), dwellings up to three storeys (8.0%), single occupancy bungalows (7.3%) highways/road surfaces/pavements (6.6%) and single shops (2.4%). Most flooding incidents require minor interventions such as making an incident safe by isolating domestic water supplies, providing advice only or not taking any action. In only 15.2% of the flooding related incidents, are pumps used to pump water out from flooded properties.

Actions at flooding incidents	Frequency of actions	Percentage
Make safe	167	57.8%
Advice only	59	20.4%
Pumping out	44	15.2%
Other	11	3.8%
Stand by - no action	8	2.8%
Total	289	100%

[Frequency of actions at flooding incidents]

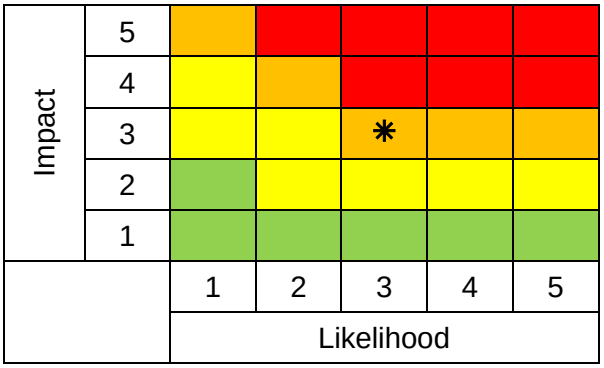
Although wide area flooding incidents are rare, they do occur at key locations throughout the Service area. Based on historical and statistical data, with professional judgement, the reasonable worst case scenario for a flooding incident within the service area would be a number of houses within a local community that became isolated due to flooding from exceptional heavy rainfall, with rivers and drainage systems already at their capacity to remove water. The excessive floodwater would require people to be evacuated from their homes, with local roads being impassable and the short term loss of power, utilities and communications until the rainfall and floodwater had receded.

Further information on flooding risk can be found here:

- Environment agency flooding
- County Durham flood risk information
- Darlington flood risk information

Risk assessment: Flooding

2017/18		75
2018/19		110
2019/20		104
Three year total		289
Three year average		96
Risk assessment	Likelihood	3 (26.4)
	Impact	3 (2.7)



R15 Industrial fires

Although the County Durham and Darlington rich industrial heritage associated with both lead and coal mining, steelworks and the railways industry have diminished, it has been replaced by many modern and diverse businesses based on manufacturing processes, healthcare and pharmaceuticals, and retail.

There are many industrial premises and estates amongst the villages and towns in the Service area, with a broad range of scenarios that have the potential to have a negative community impact. Site owners and operators are required to take necessary measures to prevent accidents involving dangerous substances and processes, with the legislation covering activities including the COMAH (Control of Major Accident Hazards) Regs (1999) and the Notification of Accidents and Dangerous Occurrences Regulations (1980)

Examples of industrial related incidents include defective extraction or heating systems that cause fires, plastic packaging factory fires and plant machinery that overheated and caused fire and smoke damage to a large factory.

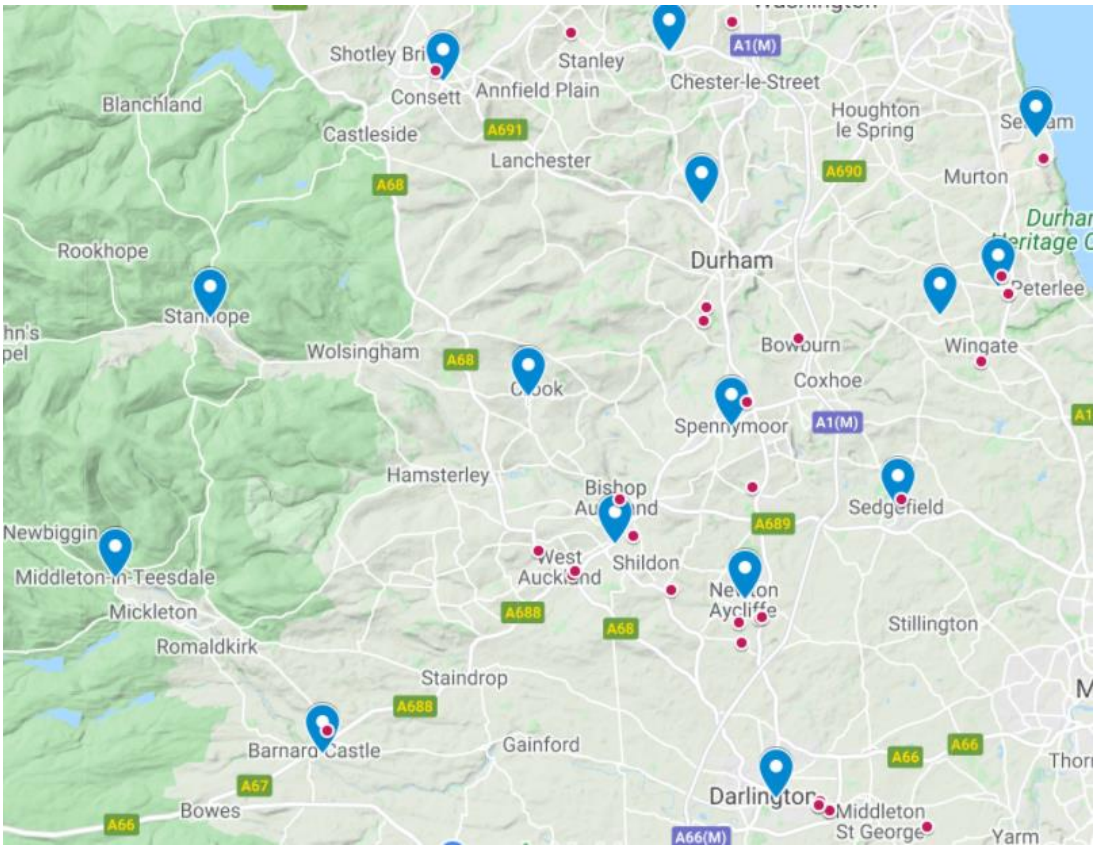
Based on historical and statistical data, with professional judgement, the reasonable worst case scenario for an industrial site or factory fire would be a large fire at one of the factories within the Service area which caused significant fire and smoke damage and ceased the production or processes with a resultant impact on employees and the local economy. The fire would require the prolonged attendance of resources to extinguish, would involve partner agencies and would have a detrimental impact on the local environment.

Industrial related incidents include those incidents in manufacturing factories and premises where engineering, assembly, and production is the primary activity. The distribution of industrial related fires for the reporting period is shown below:

Station area	Number of industrial fires	Percentage
Darlington	7	18.4%
Bishop Auckland	7	18.4%
Newton Aycliffe	6	15.8%
Peterlee	6	15.8%
High Handenhold	3	7.9%
Seaham	2	5.3%
Spennymoor	2	5.3%
Durham	2	5.3%
Consett	1	2.6%
Barnard Castle	1	2.6%
Sedgefield	1	2.6%
Total	38	100.0%

[Distribution of industrial fires throughout the Service area]

The locations of the industrial fires throughout the Service area in the reporting period is shown below:



[Locations of industrial fires throughout the Service area]

Risk assessment: Industrial fires

2017/18		6
2018/19		19
2019/20		13
Three year total		38
Three year average		13
Risk assessment	Likelihood	3
	Impact	3

Impact						
	5					
	4					
	3			*		
	2					
	1					
		1	2	3	4	5
		Likelihood				

R16 Hazardous materials

The Service must make provision to respond to incidents such as fires, road traffic collisions and other emergencies, including the events or situations that cause serious harm to the environment (including the life and health of plants and animals). The use of hazardous materials in manufacturing and industrial processes throughout the Service area presents the risk of an emergency incident that would have a negative impact on the environment. Hazardous materials are also frequently transported through the Service area by the road and rail networks.

Incidents that may involve hazardous materials occur at chemical or industrial sites, farms in rural locations where pesticides and other chemicals are used, waste sites or water treatment works.

Hazardous materials incidents during the reporting period were distributed throughout the Service area as shown below. Most hazardous materials incidents occurred in dwellings (66%) and involved gas leaks, and only 4.9% involved road vehicles.

Station area	Number of incidents	Percentage
Darlington	19	23.2%
Durham	10	12.2%
Peterlee	9	11.0%
Newton Aycliffe	7	8.5%
Bishop Auckland	7	8.5%
Consett	7	8.5%
High Handenhold	7	8.5%
Crook	6	7.3%
Spennymoor	3	3.7%
Barnard Castle	3	3.7%
Seaham	2	2.4%
Wheatley Hill	1	1.2%
Stanhope	1	1.2%
Total	82	100%

[Distribution of hazardous materials incidents throughout the Service area]

The majority of hazardous material incidents relate to domestic related supplies within dwellings. Other hazardous materials incidents include the leakage of chemicals from road vehicles, suspicious/white powder sent to both dwellings and non-residential premises and unlabelled chemical containers left by roadways or in grassland.

Type of hazardous material incident	Number of incidents	Percentage
Alarms – Gas alarms	34	41.5%
Hazardous Material – Haz mat major	13	15.9%
Hazardous Material – Gas involved	11	13.4%
Hazardous Material – Suspicious powder	8	9.8%
Hazardous Material – Haz mat minor	3	3.7%
Other types of hazmat incidents	13	15.9%
Total	82	100.0%

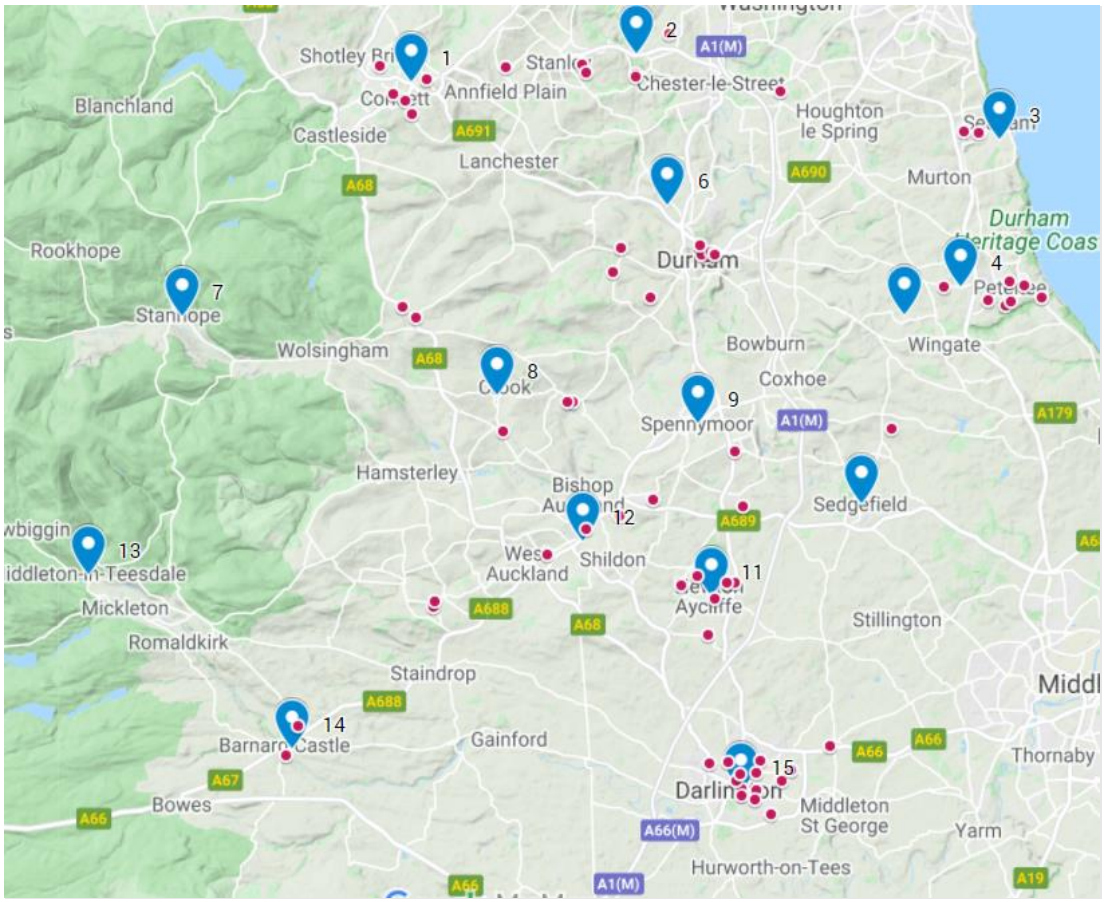
[Types of hazardous material incidents]

Locations of hazardous materials incidents

Locations of hazardous material incidents	Number of incidents	Percentage
Dwelling	54	65.9%
Non Residential	16	19.5%
Road Vehicle	4	4.9%
Other outdoors (including land)	4	4.9%
Grassland, woodland and crops	2	2.4%
Outdoor equipment and machinery	1	1.2%
Outdoor structures	1	1.2%
Total	82	100.0%

[Locations of hazardous material related incidents]

Based on historical and statistical data and professional judgement, the reasonable worst case scenario for a hazardous material related incident would be a road traffic collision involving the transport of hazardous materials through the service area. Following the RTC, leaking chemicals would require the scenario to be made safe and the impact of the environment would need to be effectively managed. This scenario would require the attendance of other agencies to deal with the incident, such as the Police for traffic management and the Environment Agency and Public Health to advise on the strategy to manage the incident to a safe and effective conclusion.



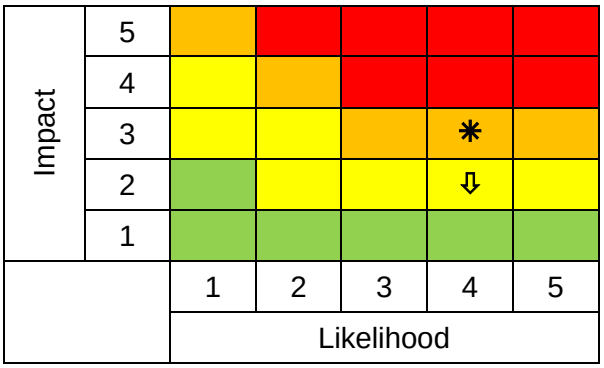
[Locations of hazardous material incident throughout the Service area]

Based on the frequency and locations of previous hazardous materials incidents, this risk is considered as being present at all the station areas with the exception of Wheatley Hill, Stanhope, Sedgefield and Middleton-in-Teesdale, and this risk is assessed with moderate confidence.

Further information on the mitigating actions to reduce this threat throughout the Service can be found within each of the corresponding station plans where the threat is present.

Risk assessment: Hazardous material incidents

2017/18		24
2018/19		23
2019/20		35
Three year total		82
Three year average		27
Risk assessment	Likelihood	4
	Impact	3



R17 Waste and recycling sites

UK fire and rescue services attend around 300 significant fires in waste sites each year. Fires in waste and recycling sites may occur at waste sites that are permitted or licensed by environmental agencies, that have an exemption from the relevant environmental agency, and at waste sites that operate illegally.

Many waste sites are managed by professional operators, which strictly adhere to regulations and good practice in controlling hazards on site. However, other sites are managed badly or are illegal and have little regard for regulations or health and safety. Hazards at illegal sites may present an even greater risk to the public and firefighters, as there may not be enough information on the content of the waste stored on site, or good operating practices may not be followed.

Fire is an ongoing risk at most sites in the waste and recycling industry due to the readily combustible nature of waste. Aside from the obvious harm that fires can cause to staff and facilities, a fire that involves waste carries additional dangers both to human health and the environment, as it may produce toxic pollutants.

Licenses recycling centres are located throughout the service area at: Annfield Plain (Consett), Coxhoe (Spennymoor), Frosterley (Stanhope), Heighington (Newton Aycliffe), Hett Hills (High Handenhold), Horden (Peterlee), Middleton-in-Teesdale, Potterhouse Lane (Pity Me) (Durham), Romanway (Bishop Auckland), Seaham, Stainton Grove (Barnard Castle), Thornley (Wheatley Hill), Tudhoe (Spennymoor) and Darlington.

Fires involving the unlicensed transfer of waste material could occur at any location in the Service area, and their frequency may be masked by the nature of the material involved and the recording of these incidents as either secondary fires or controlled burning.

Based on historical and statistical data, and with professional judgement, the reasonable worst case scenario for this type of incident would be a large deep seated fire in a recycling centre involving compacted material with difficult access and limited water supplies. The fire may cause environmental pollution into the local water courses and atmosphere for up to two weeks with local unrest and political impact beyond the duration of time to extinguish the fire.

Some of the hazards associated with fires in waste and recycling sites include:

- Hidden or rapid fire growth
- Pressurised containers, aerosols and gas cylinders
- Hazardous materials, including biological hazards
- Running or pooling fuel fires

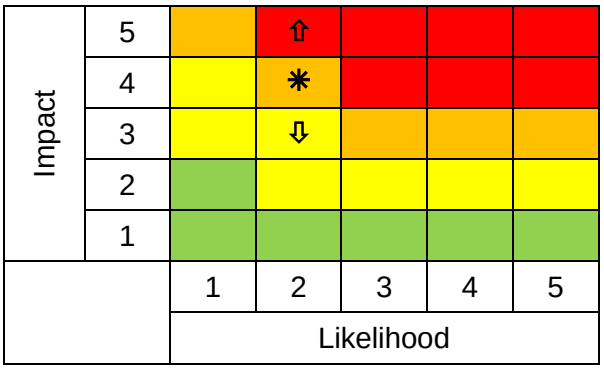
Although fires in waste and recycling sites can occur anywhere in the service area (due to some unlicensed site operators and fly tipping), this risk is considered to be present in the station areas where a waste and/or recycling sites are located. These are all the station

areas within the Service, except for Crook and Sedgefield. Due to the uncertainty of the prevalence of refuse fires that are associated with unlicensed waste transfer, this scenario is assessed with a moderate level of confidence.

Further information on the mitigating actions to reduce this threat throughout the Service can be found within each of the corresponding station plans where the threat is present.

Risk assessment: Waste and recycling sites

2017/18		1
2018/19		1
2019/20		2
Three year total		5
Three year average		2
Risk assessment	Likelihood	2
	Impact	4



R18 Animal incidents

Animals in distress can present a risk directly to individuals, and members of the public can also put themselves at risk though attempts to carry out rescues from unsafe environments, such as road traffic collisions involving animals in transit or dogs entering frozen waters

As a predominantly remote area, incidents have involved farm animals, however incidents have also occurred in built up communities involving domesticated animals. Incidents involving animals often also include other scenarios such as the rescue of dogs from water or inaccessible height related locations.

The different types of incidents attended involving animals is shown below:

Type of animal rescue	Number of incidents	Percentage
Domesticated animals (cats, dogs, horses, birds)	120	69.9%
Livestock (hoses, cows, sheep, pigs, poultry)	35	19.3%
Wild animals (horses, deer, wildfowl)	27	14.8%
Total	182	100%

[Types of incidents attended involving animals]

Examples of animal related incidents throughout the Service area in the reporting period include dogs that had fallen into rivers or manhole/inspection chambers or horses trapped in fencing. The reasonable worst case scenario for animal related incidents would be the rescue of a dog from a cliff ledge to prevent members of the public putting themselves in danger by attempting a rescue themselves. This scenario would require the attendance of specialist line rescue teams and partner agencies such as the Police or the Royal Society for the Prevention of Cruelty to Animals (RSPCA). A variation to this reasonable worst case scenario would be the rescue of a dog from a frozen river or lake, where members of the public could put themselves at risk, and specialist water rescue resources are required to conduct an effective rescue.

Most (78.6%) animal related incidents are attended by only one appliance, while 11.5% are attended by two appliances and 6.0% are attended by three appliances. For a limited number of animal related incidents (3.8%), advice only was given.

Number of appliances attending	Number of incidents	%
0	7	3.8%
1	143	78.6%
2	21	11.5%
3	11	6.0%
Total	182	100%

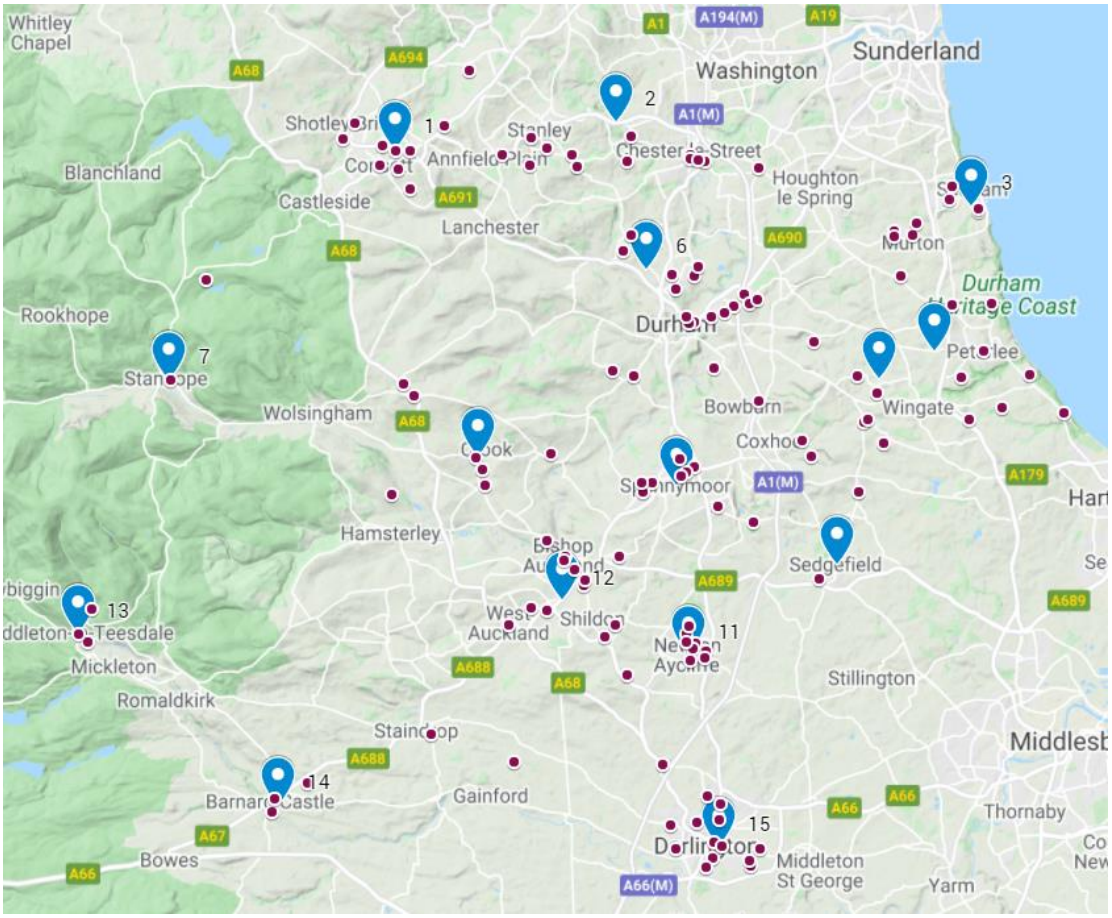
[Resources required to deal with animal related incidents]

The distribution of animal related incidents throughout the service area is shown below:

Station area	Number of animal incidents	Percentage
Bishop Auckland	22	12.1%
Darlington	22	12.1%
Durham	19	10.4%
High Handenhold	19	10.4%
Consett	16	8.8%
Seaham	16	8.8%
Newton Aycliffe	12	6.6%
Crook	11	6.0%
Spennymoor	11	6.0%
Peterlee	10	5.5%
Wheatley Hill	10	5.5%
Barnard Castle	4	2.2%
Stanhope	4	2.2%
Middleton-in-Teesdale	3	1.6%
Sedgefield	3	1.6%
Total	182	100%

[Station areas of animal related incidents throughout the Service area]

Locations of animal related incidents throughout the service area is shown below:



[Locations of animal related incidents in the reporting period]

Most animal related rescues occur from domestic properties and involve domesticated animals, while livestock and other wild animal rescues occur amongst grassland, scrubland or near rivers.

Location of animal rescues	Number of rescues	Percentage
House - single occupancy	46	25.3%
Grassland, pasture, grazing etc	13	7.1%
Fence	10	5.5%
Tree scrub (includes single trees not in garden)	10	5.5%
Pipes and drains	8	4.4%
Other outdoor location	8	4.4%
Scrub land	7	3.8%
River/canal	7	3.8%
Other outdoor structures	7	3.8%
Combined other locations	66	36.3%
Total	182	100%

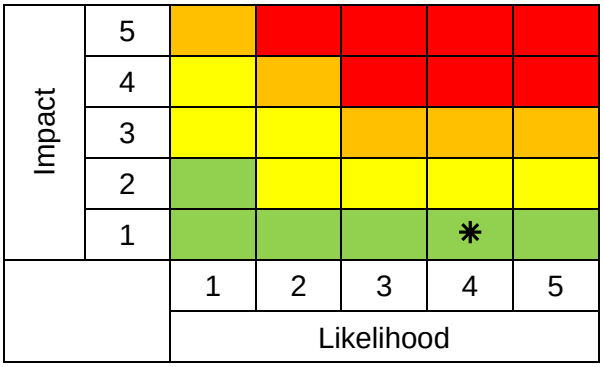
[Locations of animal rescues]

Animal related incidents in the context described within this reasonable worst case scenario are not included within the National or Community Risk Registers. Although there is a variation in the frequency and type of animal related incidents throughout the Service area, this risk is considered to be present in all station areas, and due to the number of incidents, is assessed with a high degree of confidence.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Animal related incidents

2017/18		59
2018/19		57
2019/20		66
Three year total		182
Three year average		61
Risk assessment	Likelihood	4
	Impact	1



R19 Buildings of heritage and special interest

Throughout the Service area there are a large number of historic buildings and museums which are considered to be of significant importance due to their irreplaceable structure, artifacts and objects which are valued for reasons beyond their mere utility. There is in excess of three hundred listed buildings, and any heat, smoke or fire damage (or damage caused by any extinguishing media) may have a significant adverse impact on the county's heritage related assets. Fires in buildings of heritage and special interest can adversely affect the significance, authenticity, and continuing functionality of these buildings.

Historic buildings are of considerable economic value, especially to the tourist industry and for their positive impact to their surrounding area and community. There has been a significant level of loss to the built heritage in other parts of the United Kingdom through the effects of fire, and it is imperative that all practical steps are taken to protect such buildings within County Durham and Darlington.

Heritage buildings present unique hazards, having been built in a period with no fire safety regulations, using traditional materials and construction methods. Utilities and associated protection measures are unlikely to meet current standards, and heritage buildings that are open to the public, or have had recent alterations, may have been modified to more closely meet current regulations. During a building’s lifetime, it may have been altered or extended, using different materials and methods which can cause the structure to behave in unexpected ways. In older properties, internal studded walls may support part of the weight of the property. It is also common for heritage buildings to have mezzanine floors, basements, tunnels and attics, all of which have the potential to support unexpected fire development and have an adverse impact on the structural integrity of the building.

The service area has 111 Grade One listed buildings (of exceptional interest) and 193 Grade Two listed buildings (which are particularly important and more than special interest). Durham also has a World Heritage site with Durham Cathedral and Castle, which was inscribed by the United Nations Educational, Scientific and Cultural Scientific and Cultural Organisation (UNESCO) in 1986. Listing signifies a building’s special architecture and historic interest and brings it under the consideration of the planning system so that it can be protected for future generations.

Listed buildings within the service area include:

- Durham Cathedral and Castle;
- Escomb Saxon Church;
- Raby Castle and Rokeby Park;
- Crook Hall;
- Lambton and Lumley Castle;
- Auckland Castle;

- St. Mary's Church at Barnard Castle;
- Bowes Museum;
- Walworth Castle.

The locations of all Grade One and Grade Two listed buildings throughout the Service area are available at this link: British Listed Buildings

Some of the hazards associated with fires in buildings and special interest may include:

- Lack of compartmentation which can cause fires to spread to additional rooms. Fire spread may also occur between properties where shared roof spaces or voids exist;
- Non-compliant materials used in construction, period furnishings and wall coverings which are more likely to be flammable. Flammable insulation which may allow hidden fire spread;
- Access may be limited with some roadways or entrance restrictions affecting entry to an incident;
- Unconventional layouts of buildings may be complicated, with hidden access points or sections of properties that have been blocked off or obscured.

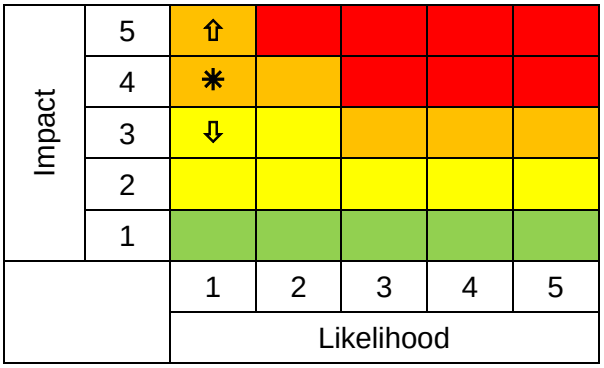
Based on historical and statistical data, and with professional judgement, the reasonable worst case scenario involving a building of heritage or special interest would be a large fire that involved the building fabric and contents of a grade one or grade two listed building within the service area. This scenario would include financial loss due to fire and smoke damage to the building and objects of both cultural and social importance. Local employment may be impacted due to the detrimental impact on any affected employees and a significant period of time would be needed to restore the building to the original condition. Due to the effective management of fire safety arrangements, it is likely the impact on human welfare would be minimal.

Due to the number and locations of Grade One and Two listed buildings throughout the Service area, this risk is considered to be present in all station areas, and this risk scenario is assessed with a moderate level of confidence due to the absence of sufficient historical incident data to inform the assessment.

Further information on the mitigating actions to reduce this risk throughout the Service can be found within each of the corresponding station plans where the risk is present.

Risk assessment: Buildings of heritage and specialist interest.

2017/18		0
2018/19		0
2019/20		0
Three year total		0
Three year average		0
Risk assessment	Likelihood	1
	Impact	4



R20 Marauding terrorist/malicious attacks

The current national threat level to the UK from terrorism and the current Northern Ireland-related terrorism threat level is Severe (October 2020), indicating that an attack is highly likely. The threat level for the UK from international terrorism is set by the Joint Terrorism Analysis Centre (JTAC). MI5 is responsible for setting the threat levels from Irish and other domestic terrorism both in Northern Ireland and in Great Britain. In reaching a judgement on the appropriate threat level in any given circumstance several factors need to be considered. These include available intelligence, terrorist capability, terrorist intentions and timescale.

The inclusion of this threat within the Service Community Risk profile is informed by the presence of this scenario within both the National Risk Register, the Community Risk Register and the content of the County Terrorism Local Profile (CTLP).

Of the terrorist threats facing the UK, Islamist terrorism remains the most significant, however, this is considered to be lower than at its peak in 2017, owing to a suppression of the UK threat. However, this suppression may only be temporary as the threat is volatile and the scale and pace of the threat could change at short notice. While the threat of right wing terrorism is lesser in scale, the CTLP describes this threat as still growing. This threat is predominantly driven by lone actors who adopt a range of right wing extremist ideologies and who believe in the use of violence to further that ideology.

Based on intelligence from the regional Counter Terrorism team and professional judgement, the reasonable worst case scenario would be a marauding, simultaneous or near simultaneous firearms attacks in a crowded urban area. This would result in a significant number of fatalities and casualties with gunshot, blast and other injuries. Further injuries may occur as an indirect result of people trying to leave the scene. There are also likely to be psychological casualties which either present immediately or at a later date. Other impacts could include disruption to local and regional transport services as a consequence of attacks at transport hubs, or disruption to schooling, short term excessive demands on hospitals and the short term local evacuation from affected communities.

These scenarios also cover terrorist activity carried out using explosives, low sophistication devices and chemical, biological, radiological and nuclear (CBRN) weapons by international and domestic groups or individuals. Examples of these incidents would be large scale chemical, biological, radiological, or nuclear attack, attacks on infrastructure, attacks on crowded places or attacks on transport. White powder incidents have been assessed in the hazardous materials section of the Community Risk Profile and not included within this scenario.

This threat is also assessed through the analysis of the County Durham and Darlington Counter Terrorism Local Profile (CTLP) which aims to develop a joint understanding of the local threats, vulnerabilities and risks relating to terrorism and extremism. The CTLP is used to identify emerging issues, information gaps and makes recommendations for partnership activity to be actioned through CONTEST (Counter-terrorism strategy) delivery plans.

Further information on marauding terrorism/malicious attacks can be found at these links:

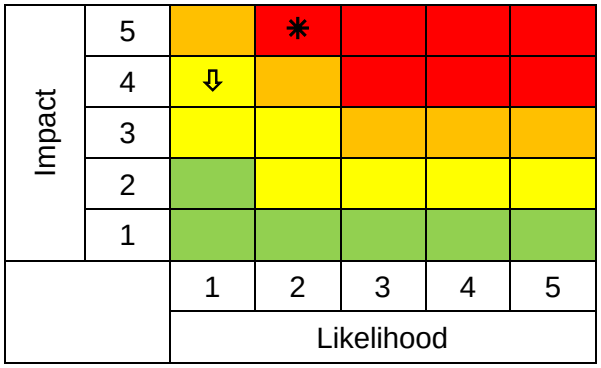
- Guidance on Marauding terrorist attacks
- National Counter Terrorism Security Office
- Protecting crowded places from terrorism

Although there have been no marauding terrorist or malicious attacks within the Service area, information available from the National Risk Register (2020) and the regional Counter Terrorism team advises that the threat remains plausible and it would be most likely to occur in the most densely populated areas (Durham and/or Darlington). In the absence of a historical range of incidents to inform the assessment of this scenario, and the broad range of attack methodologies used by threat actors, both the impact and likelihood are assessed with a moderate level of confidence.

Further information on the mitigating actions to reduce this threat throughout the Service can be found within each of the corresponding station plans where the threat is present.

Threat assessment: Marauding terrorist/malicious attacks.

2017/18		0
2018/19		0
2019/20		0
Three year total		0
Three year average		0
Threat assessment	Plausibility	2
	Impact	5



CDDFRS Risk Rating Matrix

Modifications to the positions on the risk matrix from the previous iteration of the County Durham and Darlington Fire and Rescue Service Community Risk Profile have occurred from revisions to both the risk assessment methodology and changes in the national, regional and local risk landscape.

The following two risks have been removed from the current risk scenarios and risk rating matrix and will both be reassessed for inclusion in future publications of the County Durham and Darlington Community Risk Profile:

- Building collapse. Due to such a low frequency of occurrence of this scenario, and that the buildings that experienced partial or full collapse were as a result of other incidents such as an RTC or fire, the risk has been removed from the Community Risk Profile and will be re-assessed at a later date.
- Major public events. This scenario described the potential impact on local infrastructure, resources and emergency services if an adverse safety event occurred. Due to the Covid-19 pandemic, the likelihood of an emergency incident occurring at a major public event in the next year has diminished as numerous large scale public gatherings have been cancelled, and this scenario will be re-assessed at a later date.

The following two new scenarios have been included in the revised Community Risk Profile:

- Maritime incidents. Although this risk is a low likelihood and impact, it is included in the new assessment to complete all the transport related risks with road, rail and air, and is only applicable to the one station area with a coastline (Seaham).
- Due to the very high prevalence of vehicle fires within the Service area in the reporting period, the previous risk of Primary fires (other than buildings) (which included road vehicle fires) has now been re-assessed in line with the Home Office definitions and categorisation where both Road Vehicle Fires (R4) and Other outdoor fires (R5) are independent incident categories.

Based on historical precedents, statistical models, forecasts and professional judgement, the risk scenarios that have the potential to impact upon the communities of County Durham and Darlington are presented in the risk rating matrix below:

Impact of the reasonable worst case scenario						
	5		R20 Marauding terrorist/ malicious attacks.			
	4	Buildings of heritage and special interest	R17 Waste and recycling sites			R1 Dwelling fires R4 Road vehicle fires R5 Secondary fires
	3			R2 Other residential building fires R8 Rescues from water R14 Flooding R15 Industrial fires	R6 Other outdoor fires R16 Incidents involving hazardous materials	R3 Other non-residential building fires R10 Road Traffic Collisions
	2			R7 Wildfires R9 Rescues from height		
	1	R13 Maritime incidents	R11 Rail incidents R12 Aircraft incidents		R18 Animal incidents	
Risk rating matrix		1	2	3	4	5
		Likelihood of reasonable worst case scenario of the risk occurring in the next year				

[County Durham and Darlington Fire and Rescue Service Risk Rating Matrix]

Community Risk Profile link to station plans

Although there are elements of risk from the National Risk Register, and the County Durham and Darlington Local Resilience Forum Community Risk Register throughout all our all our communities, based on the assessments within the Community Risk Profile, the risks assessed as being most prevalent within each station area is shown below:

CDDFRS North Division			Consett	High Handenhold	Seaham	Peterlee	Wheatley Hill	Durham	Stanhope	Crook
			1	2	3	4	5	6	7	8
Fires	R1	Dwelling fires	✓	✓	✓	✓	✓	✓	✓	✓
	R2	Other residential building fires	✓	✓	✓	✓	✓	✓	✓	✓
	R3	Other non-residential building fires	✓	✓	✓	✓	✓	✓	✓	✓
	R4	Road vehicle fires	✓	✓	✓	✓	✓	✓	✓	✓
	R5	Other outdoor fires	✓	✓	✓	✓	✓	✓	✓	✓
	R6	Secondary fires	✓	✓	✓	✓	✓	✓	✓	✓
	R7	Wildfires	✓						✓	
Rescues	R8	Water		✓	✓			✓	✓	✓
	R9	Height	✓	✓	✓	✓	✓	✓		
Transport	R10	Road	✓	✓	✓	✓	✓	✓	✓	✓
	R11	Rail		✓				✓		
	R12	Air								
	R13	Sea			✓					
Weather	R14	Flooding	✓	✓	✓	✓	✓	✓	✓	✓
Societal	R15	Industrial incidents	✓	✓	✓	✓		✓		
	R16	Hazardous materials	✓	✓	✓	✓		✓		✓
	R17	Waste disposal and recycling sites	✓	✓	✓	✓	✓	✓	✓	
	R18	Animal incidents	✓	✓	✓	✓	✓	✓	✓	✓
	R19	Buildings of heritage/special interest	✓	✓	✓	✓	✓	✓	✓	✓
	R20	Marauding terrorist/malicious attacks						✓		

[North division station risk profile]

CDDFRS South Division			Spennymoor	Sedgefield	Newton Aycliffe	Bishop Auckland	Middleton in Teesdale	Barnard Castle	Darlington
			9	10	11	12	13	14	15
Fires	R1	Dwelling fires	✓	✓	✓	✓	✓	✓	✓
	R2	Other residential building fires	✓		✓	✓			✓
	R3	Other non-residential building fires	✓	✓	✓	✓	✓	✓	✓
	R4	Road vehicle fires	✓	✓	✓	✓	✓	✓	✓
	R5	Other outdoor fires	✓	✓	✓	✓		✓	✓
	R6	Secondary fires	✓	✓	✓	✓	✓	✓	✓
	R7	Wildfires					✓	✓	
Rescues	R8	Water	✓			✓	✓	✓	✓
	R9	Height		✓	✓	✓			✓
Transport	R10	Road	✓	✓	✓	✓	✓	✓	✓
	R11	Rail	✓		✓				✓
	R12	Air							✓
	R13	Sea							
Weather	R14	Flooding	✓	✓	✓	✓	✓	✓	✓
Societal	R15	Industrial incidents	✓	✓	✓	✓		✓	✓
	R16	Hazardous materials	✓		✓	✓		✓	✓
	R17	Waste disposal and recycling sites	✓		✓	✓	✓	✓	✓
	R18	Animal incidents	✓	✓	✓	✓	✓	✓	✓
	R19	Buildings of heritage and special interest	✓	✓	✓	✓	✓	✓	✓
	R20	Marauding terrorist/malicious attacks							✓

[South division station risk profile]

Further information on the mitigating actions to reduce risks throughout our communities are described within each corresponding station plan.

Appendices

Appendix one: CRP Risk Assessment Methodology

The Service risk assessment methodology is derived from the approach used to identify and assess risks and threats at the national level to inform the National Risk Register and is described below.

Risk identification - the Reasonable Worst Case Scenario

For the purposes of contingency planning and the assessment of wider consequences, *risks are described as a challenging, yet plausible manifestation of a potential incident and based on appropriate relevant data and intelligence.* The use of a reasonable worst case scenario for each risk ensures that the community risk profile doesn't compare the best case scenario for some risks and the worst case scenario for others.

The scenarios described within the community risk profile represent the current most frequently attended range of incidents, and new risks to inform future iterations of the risk profile may be identified through:

- The inclusion of new risks within the National Risk Register or the County Durham and Darlington Local Resilience Forum Community Risk Register.
- Lessons learned from National Operational Learning (NOL) or Joint Organisational Learning (JOL);
- New research, analysis and/or data.

Impact assessment

When a reasonable worst case scenario has been identified, the likelihood and impacts of the scenario are then considered. To ensure consistent assessment and statistical rigour, all scenarios are assessed against the same set of impact criteria.

Where appropriate, national level impact scales, such as population, economic impact and environmental impact are used proportionately to reflect the demographic and geographic size of the Service area.

Each indicator is allocated an impact score from zero to five based on the scope, scale and duration of the harm that the reasonable worst case scenario could foreseeably cause. Within the community risk profile methodology, there are five dimensions of 'harm' which contribute to the overall impact score, with some of these factors being comprised of multiple impact indicators of harm, as shown below:

Impact dimensions and indicators:

1. Human welfare
    - Fatalities
    - Injuries
2. Behavioural
    - Public perception
3. Community economic impact
4. Essential social services
    - Transport
    - Gas
    - Electric
    - Water
    - Communications
    - Healthcare
    - Emergency services
5. Environment

Each dimension is important, and to ensure that scores that have a more catastrophic impact within a given reasonable worst case scenario are drawn out, the dimension scores are weighted. Dimension scores between zero and three remain unweighted, however a score of four is doubled (to eight) and a score of five is tripled (to fifteen). To calculate the total impact score, the sum of the weighted scores is divided by the sum of the weights. The resultant value between one and five is rounded up or down to the nearest whole number.

Example:

Impact scores				
Dimension	**Impact indicator**	**Highest score (0-5)**	**Weight**	**Weighted score**
Human welfare		**0**	1	0
	Fatalities	0		
	Injuries	0		
Behavioural		**4**	2	8
	Public perception	4		
Community economic impact		**3**	1	3
	Economic impact	3		
Essential social services		**5**	3	15
	Transport	0		
	Gas	0		
	Electric	0		
	Water	0		
	Communications	0		
	Healthcare	0		
	Emergency services	5		
Environment		**3**	1	3
	Environmental damage	3		
			8	**29**
Total impact score 29/8 = 3.625 rounded up to 4				

[Example of an impact assessment using impact dimensions and indicators]

The total impact score is determined using the following process:

- The highest individual indicator score is used to determine each dimension's highest score;
- Weighting is determined by the highest score for each dimension. Scores between zero and three remain unweighted. A score of four is doubled and a score of five is tripled;
- The weighted score is calculated by multiplying the weighted score by the weight;
- To calculate the overall impact score for a reasonable worst case scenario, the sum of the weighted scores is divided by the sum of the weights;
- The overall impact score is rounded to the nearest whole number (between one and five) to enable the impact to be plotted on the risk rating matrix.

Likelihood assessment

The likelihood timescale is considered to be the annual likelihood of the reasonable worst case scenario occurring, and it is calculated by drawing from historical precedent, statistical models, forecasts and professional judgement. Similar to impact scoring, overall risk likelihood is scored on a one to five scale.

The precision of likelihood assessments will vary, and for some risk scenarios, historical data lends itself to a high degree of confidence in the overall risk assessment, while for other risks, limited data and knowledge gaps necessitate greater reliance on expert judgement.

The overall risk likelihood is scored on a one to five scale using a numerical estimate. By definition (a challenging, yet plausible manifestation of the risk), the reasonable worst case scenario has a relatively low likelihood, so in order to enable comparison of risk scenarios, the likelihood scale is logarithmic. The likelihood scale used for the risk scenarios within the CDDFRS Community Risk Profile is shown below:

Likelihood score	All risks: Likelihood of an event (annual probability assessed over a three year period)
1	Less than 0.2%
2	Between 0.2% and 1%
3	Between 1% and 5%
4	Between 5% and 25%
5	More than 25%

[Likelihood scores and the logarithmic likelihood scale]

Confidence

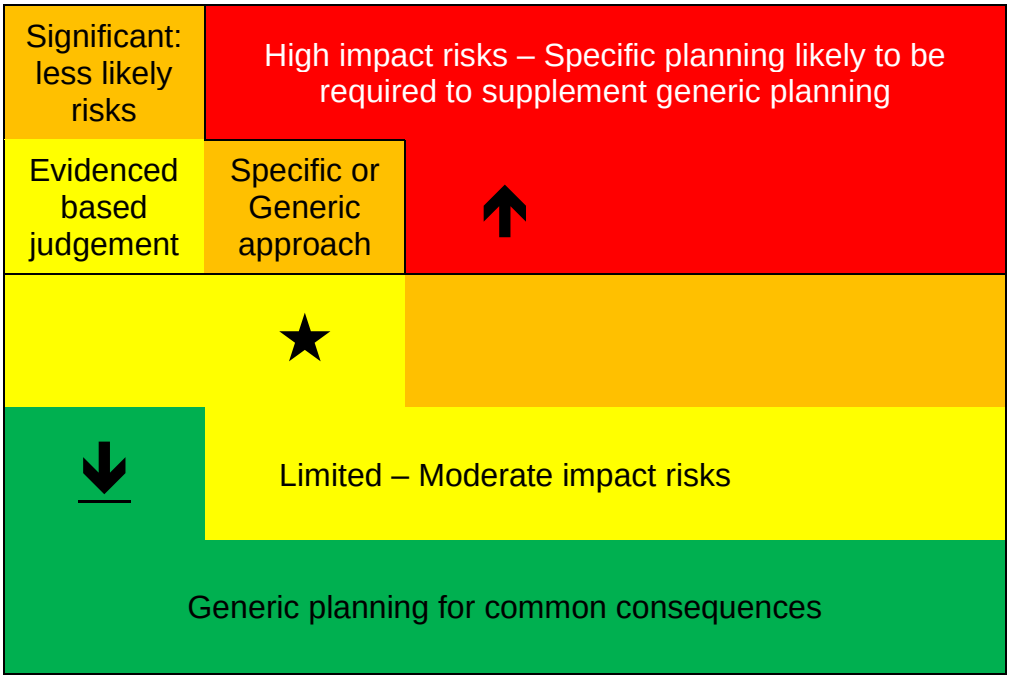
Uncertainty is an inherent part of analysis and should be clearly acknowledged to identify weaknesses in an evidence base and provide a more detailed picture of the risk landscape. The inclusion of a confidence in the risk assessment process helps to avoid making decisions on the basis of false confidence and uncertainty.

Confidence	Description
Low	Several areas of the assessment are significantly affected by uncertainty creating uncertainty bounds of at least +2 or -2 in the overall likelihood or impact score.
Moderate	Some areas of the assessment are significantly affected by uncertainty creating uncertainty bounds of up to +1 or -1 in the overall likelihood or impact score
High	Very few areas of the assessment are significantly affected by uncertainty. The overall matrix position is considered to be accurate.

[Confidence scale and description]

Visualising risk assessment

When the overall impact and likelihood scores have been calculated for each risk, they can be plotted on a five any five risk rating matrix. The matrix can then be used to further subdivide risks into red, amber, yellow and green risks in order to assess whether specific planning is likely to be required (red risks) or whether the consequences can be planned for in a more generic way (amber, yellow and green). Confidence levels can then be added to the matrix to give the upper and lower limits of the boundaries of uncertainty in the manifestation of the RWCS. In the example below, there is a moderate confidence in the impact assessment (shown by the +1/-1 vertical arrow range, and moderate confidence in the likelihood assessment (shown by the +1/-1 horizontal arrow range). This means that the RWCS could have an impact anywhere between two and four, and a likelihood anywhere between one and three. High levels of uncertainty indicate that further research or analysis should be completed to better inform the understanding of the risk on the communities of County Durham and Darlington. This principle is presented below:



[Risk rating matrix]

The risk rating matrix can then be subdivided into red, amber, yellow and green risks in order to assess whether specific planning is likely to be required (red risks) or whether the consequences can be planned for in a more generic way.

Appendix two: CRP Terminology and Definitions

The definitions used in this Community Risk Profile are derived from various sources, including, The National Security Risk Assessment, HM Government National Risk Register (2020 edition), Lexicon of UK Civil Protection Terminology (version 2.1.1) and the Health and Safety Executive

- Community risk register: A register communicating the assessment of risks within a Local Resilience Area which is developed and published as a basis for informing local communities and directing civil protection workstreams.
- Confidence: The degree of uncertainty in the assessment of risk that provides a detailed picture of the risk landscape. Confidence can be expressed as low, moderate or high.
- Consequences: Impact resulting from the occurrence of a particular hazard or threat, measured in terms of the numbers of lives lost, people injured, the scale of damage to property and the disruption to essential services and commodities.
- Emergency: An event or situation which threatens serious damage to human welfare in the Service area, or the environment.
- Foreseeable: Risks that are foreseeable (but not classed as 'reasonably foreseeable') are those that happen very rarely and may include major disasters such as plane crashes, train collisions or major explosions. It may be foreseeable that such incidents could happen, but historical precedent, statistical analysis and professional judgement indicate these are exceptionally rare events.
- Impact: The scale of the consequences of a hazard, threat or emergency expressed in terms of a reduction in human welfare, damage to the environment and loss of security
- Likelihood: The annual likelihood of the reasonable worst case scenario occurring, and it is calculated by drawing from historical precedent, statistical models, forecasts and professional judgement. The chance of something happening, whether defined, measured or estimated objectively or subjectively, or in terms of general descriptors (such as rare, unlikely, almost certain), frequencies or mathematical probabilities.
- Planning assumptions: Descriptions of the types and scales of consequences for which organisations should be prepared to respond. These will be informed by the risk assessment process.
- Reasonably foreseeable: A reasonably foreseeable risk is one that, if realised, could result in injury or damage, and which could have been predicted by a reasonable person with the necessary skills and knowledge. Reasonably foreseeable fire and rescue related risks are those that happen regularly including primary and secondary fires, rescues, transport related incidents, hazardous materials related incidents and some terrorist related activities. It is

also reasonably foreseeable that some emergencies may happen at the same time and that some of them will be protracted in their nature.

- Reasonable worst case scenario: The challenging, yet plausible manifestation of a potential incident and based on appropriate relevant data and intelligence.
- Reporting period: For the assessment of the risk scenarios within the community risk profile, data for the three years from 1 April 2017 to 31 March 2020 is used as the reporting period.
- Risk: Measure of the significance of a potential emergency in terms of its assessed likelihood and impact.
- Risk assessment: A structured and auditable process of identifying potentially significant events, assessing their likelihood and impacts, and then combining these to provide an overall assessment of risk, as a basis for further decisions and action.
- Risk management: All activities and structures directed towards the effective assessment and management of risks and their potential adverse impacts.
- Risk rating matrix: Table showing the likelihood and potential impact of events or situations, in order to ascertain the risk.
- Threat: Intent and capacity to cause loss of life or create adverse consequences to human welfare (including property and the supply of essential services and commodities), the environment or security.
- Variation: A variation of a reasonable worst case scenario describes an alternative, challenging but plausible incident of a similar theme

Further definitions, descriptions of terminology and abbreviations used in risk assessment processes and civil the protection landscape are located in the Lexicon of UK Civil Protection Terminology

Appendix three: Dwelling fire risk identification pyramid

The dwelling fire risk identification pyramid shows the hierarchical process used to identify dwelling fire risk and focus resources appropriately.

Dwelling fire risk methodology levels

Level 1. High Risk Referrals are referrals and safeguarding concerns identified by our operational crews and Community Risk Officers (CROs), as well as direct referrals from partner agencies, many of whom work with the most vulnerable

members of the community. This includes frontline services that have access to people's homes such as social services, community nurses, care workers, charities and other health organisations.

Level 2 High Risk Dwellings. This methodology involves profiling each dwelling within County Durham and Darlington against a number of datasets associated with elevated risk. These datasets consist of service-specific data such as incident and response-time data, as well as the Exeter data set provided by NHS England. Experian lifestyle data is also used to profile the demographics of those at greatest risk. The profiled data is used to target dwellings and the occupiers subject to the greatest risk of fire.

Level 3 High Risk LSOAs. CDDFRS introduced this revised targeting methodology in 2018, which has allowed the more precise targeting of risk by moving from ward level to LSOAs. This level incorporates targeting resources at the geographical areas at greatest risk of fire. The areas are evaluated in terms of risk by combining data from past incident activity and other demographic data such as deprivation and lone households, all of which are again associated with an elevated level of risk of fire.

Level 4 Scheduled visits are created when members of the public contact the FRS in order to receive a Safe and Wellbeing Visit (SWV). This may be as a result of events in the community whereby people provide their contact details, or where people have seen some of the many campaigns that run across the year. This may also include people requesting visits for family or friends with their consent, where they feel there could be factors elevating the risk of fire, or following a dwelling fire whereby crews would carry out a 'hot strike' of visits in the local surrounding area.

Level 5 Unscheduled visits may occur when operational crews carrying out scheduled visits in a neighbourhood decide to visit additional properties. This could be because they are aware that the property has never been visited by the FRS or was last visited several years ago.

Reinspection programme

All dwellings identified as being high or very high risk, following a SWV or partnership referral, will fall into a reinspection cycle whereby the properties will be revisited within a pre-determined time period.

Removal from the reinspection process will only occur if the risk level is downgraded following a visit.

Appendix four: Business fire risk identification process

Understanding the business fire risk safety identification process

Risk-based inspection programme

The three-year programme involves inspections by the central team and operational crews, including elements of risk-based themes to identify premises types or localities on which to focus. The focus of these audits changes depending on intelligence gathered from the profiling of previous years' fire incidents in non-domestic properties, as well as national trends.

Post-fire audits

A post-fire audit is carried out following a fire on non-domestic premises to ascertain if any legal action should be taken against the Responsible Person; it also serves as an opportunity to give advice to the occupants to prevent future fires from occurring and to make the premises safer.

Statutory applications

UK FRSs are statutory consultees for both Building Regulations applications and Licensing applications. These applications may trigger an audit if the premises in question have not received a recent visit or if the changes to the building or the purpose for which the building is to be used are substantial.

Complaints and enquiries

There are occasions when members of the public complain to CDDFRS with regard to the fire safety of a building or the management of particular premises in relation to fire safety. All complaints are investigated within 24 hours of being reported. Complainants are contacted if they wish to receive feedback following the investigation and can remain anonymous if requested. People also contact CDDFRS for goodwill advice or to request an audit of their premises.

New premises identification

Operational crews are utilised to carry out data gathering within their station areas to establish new businesses and to ensure they are entered into the reinspection programme. Themes are set to cover risks that become evident through past fire profiling and national trends.

Premises can also be cross-mapped to ensure they are within CFRMIS and in the reinspection programme. Crews feedback intelligence to the central fire safety team on new properties that they find when carrying out duties in the community.

Continuous reinspection programme

The continuous reinspection programme is managed within CFRMIS. It uses embedded risk ratings and the compliance levels of premises to schedule jobs in response to the risk level following a fire safety audit and the completion of an ABC audit form. As a result, the reinspection frequency for given premises is greater where the risk to occupants is greater, and the potential loss or risk to the community, at a local or national level is taken into account as the score is weighted to reflect this. Our current frequency of audits ranges between 12 months and 12 years, depending on the risk rating.

Appendix five: References and sources of information

Through the development of our Community Risk Profile a number of reference documents have been used to influence the risk assessment process. These include:

- Community Risk Management Planning (Draft Fire Standard)
- The National Security Risk Assessment (2019)
- The National Risk Register (2020 edition)
- The County Durham and Darlington Local Resilience Forum Community Risk Register
- National Fire Chiefs Council National Review of Community Risk Methodology across the UK Fire and Rescue Service 2019
- County Durham Joint Strategic Needs Assessment
- County Durham Insight
- Darlington Borough Profile 2019
- Lexicon of UK civil protection terminology - version 2.1.1 (February 2013)
- Office for National Statistics (various sources)
- Home Office Fire Statistics definitions