



Strategic Assessment of Risk 2019/20

Contents

Version Control	4
Executive Summary	5
1. Combined Fire Authority	8
2. Population & Demographics	9
2.1. Population	9
2.2. Population Projections	10
2.3. Household Projections	11
2.4. Cultural Diversity	13
2.5. Religion	13
2.6. Workday Population	14
2.7. Ageing Population	16
2.8. Deprivation	17
2.9. Fuel Poverty	17
3. Response Risk	20
3.1. Fires in the home	20
3.1.1. Living Alone	23
3.1.2. High Rise Dwellings	27
3.1.3. HFSC's	28
3.2. Fires in Commercial Buildings	30
3.2.1. Primary Authority Schemes	34
3.3. Deliberate Fires	34
3.4. False alarms	38
3.5. Road Traffic Collisions	38
3.6. Flooding	42
4. Infrastructure Risk	45
4.1. Road Networks	45
4.2. Rail & Tram Networks	45
4.3. Ports & Maritime	46
5. Industry Risk	47
5.1. BAE Systems	47
5.2. COMAH & REPPiR Sites	48
5.3. Waste, Recycling and Scrap Sites	49
5.4. Heritage	51
5.5. Piers	52

5.6.	Lancaster University.....	53
6.	Tourism	54
6.1.	Tourism in Lancashire	54
6.2.	Blackpool Pleasure Beach	54
6.3.	Blackpool Promenade.....	54
6.4.	Football Grounds	55
7.	Environmental Risk	55
7.1.	Lancashire Coastline and River Network.....	55
7.2.	Moorland.....	56
7.3.	Reservoirs & Water Storage	58
7.4.	Wind Farms	59
7.5.	Solar Energy	59
7.6.	Fracking	60
7.7.	Climate Change	60
8.	Technological Risk	62
9.	Organisational Risk	63
9.1.	Business Continuity.....	63
9.2.	The General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (DPA2018).....	63
10.	National & Regional Risk.....	64
10.1.	National Resilience Assets.....	64
10.2.	International Search and Rescue.....	64
10.3.	Specialist Response Vehicles	64
10.4.	National Risk Assessment and National Risk Register	64
10.5.	Lancashire Resilience Forum	65
10.6.	Brexit	66
10.7.	Terrorism	67
11.	Main Findings.....	67

Version Control

Title:	Lancashire Fire and Rescue Service Strategic Assessment of Risk 2019/20
Version:	3.5
Author:	Strategic Policy, Planning and Programme Officer
Reviewers:	Senior Management Team
Contributors:	Knowledge and Information Management
Approval for issue :	DCFO
Issue Date:	
Review Date:	
Distribution:	Public Document – LFRS Internet site

Executive Summary

This is the third edition of Lancashire Fire and Rescue Service's (LFRS) 'Strategic Assessment of Risk' (SAoR).

The assessment seeks to underpin our Integrated Risk Management Plan (IRMP) by ensuring that risk management drives decision-making within LFRS.

Having firstly described the statutory responsibilities placed upon LFRS and the Combined Fire Authority committee structure in chapter 1, the document then aims to provide depth of detail across a number of areas of risk pertinent to the county of Lancashire.

Chapter 2 explores 'population and demographics'. Information is provided on population density across the 14 districts that make up Lancashire, in addition to clarification on aspects of ethnicity, religion and work-day populations, particularly around the Preston area. The chapter highlights the particular relevance of aspects of deprivation within Lancashire, not least the prevalence of fuel poverty across an ageing population profile; one which statistically looks to continue to increase significantly in age terms over the next fifteen years at least. The combination of such factors poses risks to members of the communities we serve and hence it is incumbent upon us to be aware of their changing needs and the potential for increased risk in areas traditionally seen as low risk.

Chapter 3 considers 'response risks', initially in relation to the distribution of housing across Lancashire by Council Tax band. It is interesting to note once again that by far Lancashire has more housing falling into the lowest Council Tax band (Band A) than any other banding; 39.9% compared with a national average of just less than 25%. This is considered alongside historic data on accidental dwelling fires (fires in the home) and the correlation with such factors as lone occupancy, pensionable age and parentage. The chapter also evaluates reductions seen in commercial fires over the last ten years and considers our effectiveness in tackling deliberate fire setting and in reducing unwanted false alarms.

The need for us to forge ahead with work streams relating to reducing road traffic collisions, road deaths and injuries are documented by the use of KSI data (killed or seriously injured). Within this section is a narrative on a more emergent risk to LFRS, that being our non-statutory response to flooding incidents.

Chapter 4 broadens the study in relation to assessing risks arising from infrastructure such as road, rail, tram, ports and airports. It considers the mitigating factors that exist in relation to our response to incidents occurring at these locations.

Chapter 5 explores industry risk within Lancashire and considers both those sites that have existing pre-planning arrangements in place (such as those covered by COMAH Regulations and REPPiR Regulations) in addition to other areas of risk where LFRS conducts its own incident pre-planning activities (examples being heritage sites and the piers of the Fylde coast).

Chapter 6 covers the risks associated with tourism within Lancashire. It outlines our highest risk area being Blackpool and the risks associated to this.

Chapter 7 deals with 'environmental risks'. This section includes commentary on Lancashire's coastline, rivers, reservoirs and moorland areas. It also considers technological developments such as the use of Fracking to extract shale gas and the broadening of solar energy and wind farm installation use.

Chapter 8 considers technological risks, including the Emergency Services Mobile Communications Programme (ESMCP), which will deliver a revolutionary new communications system across the 3 emergency services. It represents a full overhaul of our communications systems within North West Fire Control (NWFC), on fire appliances and for officers.

Chapter 9 provides a narrative on organisational risks of business continuity and the recent changes to data protection legislation and considers how we are currently placed to respond to these areas of risk.

Chapter 10 relates to national and regional risk factors. It considers the role of LFRS within Lancashire Resilience Forum and the link from the group towards the maintenance of Lancashire's Community Risk Register. This section also considers the risks arising from terrorism, our understanding and use of threat levels and the assets that we have in place to mitigate and respond to any such occurrences.

Finally, chapter 11 draws together the main findings of the assessment to inform, as appropriate, our Integrated Risk Management Plan, Corporate Risk Register, and annual planning activities for the next few years.

Introduction

The Fire and Rescue National Framework identifies challenges that we have to deal with such as the continued threat of terrorism, the impacts of climate change, impacts of an ageing population and the need to cut the national deficit. In pursuit of our vision of 'Making Lancashire Safer', it is important that these wider challenges are understood to help us plan to achieve our strategic objectives in a more informed manner.

In order to address these challenges Lancashire Fire and Rescue Service (LFRS) carry out a periodic assessment of risk to help us to consider the potential impact of external factors that may be a risk to our business. Where we identify risks, we need to take action. This may be to actively mitigate the risk or simply to monitor it, and indeed there may be risks that we choose to accept and to take no action. Ultimately we must satisfy ourselves through this strategic assessment of risk that there is no threat to our vision and that our strategic objectives are not compromised.

As a Service we review our assessment of risk at least annually by analysing our external and internal operating environments as part of our corporate planning process. This edition of Lancashire's Strategic Assessment of Risk (SAoR) document aims to highlight the risks we face and describes how we intend to deal with them. The information is based on current and historical risk data which is presented to inform our plans and strategies both now and in the future. This SAOR underpins our corporate planning process and will strengthen our Integrated Risk Management Plan (IRMP), which we have a statutory duty to provide. Whilst the IRMP summarises how, through planning, we consider fire and rescue related dangers that could affect our communities and how we aim to tackle them, the SAOR provides some of the detail on these risks to give context to our corporate planning process.

The environment in which we operate is constantly changing and new risks to our communities will always emerge. It is our job to ensure that we continually assess these changing risks and ensure we keep the communities of Lancashire safe through our assessment of risk and prioritising our response to those risks. In addition to our annual process we continue to analyse any emerging opportunities and threats throughout the year through our normal risk management processes.

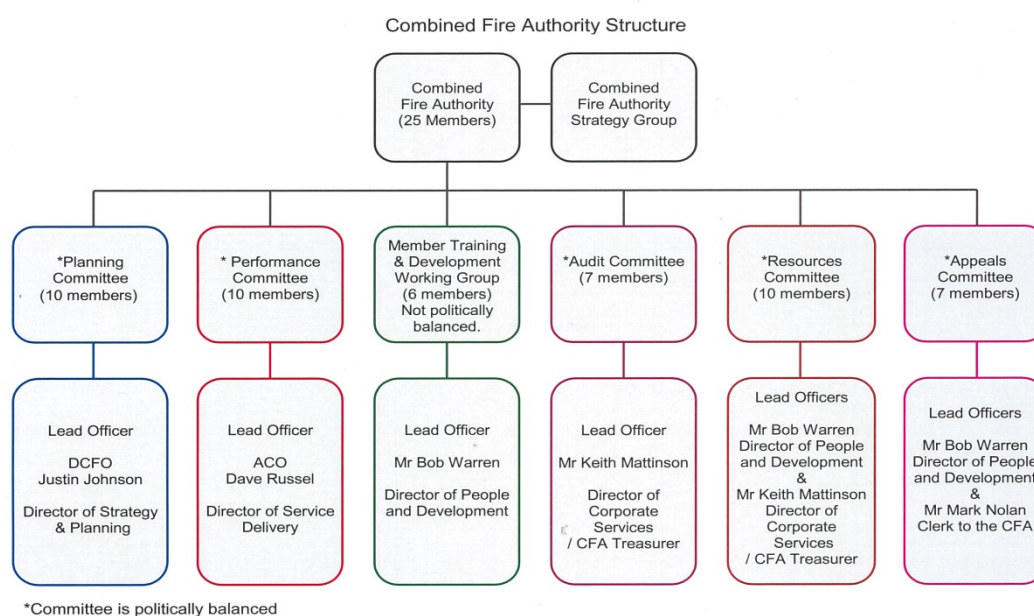
1. Combined Fire Authority

The Lancashire Combined Fire Authority (CFA) is responsible for leading and supporting Lancashire Fire and Rescue Service. The CFA has a membership of 25 elected councillors consisting of 19 from Lancashire County Council, 3 from Blackburn with Darwen Council and 3 from Blackpool Council. Under the Fire and Rescue Services Act 2004 the CFA is legally required to enforce fire safety legislation and to reduce the risk of fire causing death, serious injury and property related losses to the community. It must also make provision for rescuing people in the event of road traffic collisions and for protecting people from serious harm arising from road traffic collisions in the Lancashire area.

The CFA is legally responsible for the enforcement of the Regulatory Reform 2005 (Fire Safety) Order which is applicable across England and Wales. This Order places the responsibility on individuals within an organisation to carry out risk assessments to identify, manage and reduce the risk of fire within public and commercial buildings.

The CFA is also a designated Category 1 responder under the Civil Contingencies Act 2004. This Act requires emergency responders in England and Wales to co-operate in maintaining a public Community Risk Register which is a product of the Lancashire Resilience Forum (LRF). The LRF allows responders the opportunity to consult, collaborate and share information with each other in order to facilitate planning and response to emergencies.

The CFA meets five times a year; with five sub committees which report back to the Authority, meeting separately throughout the year. The CFA makes key strategic decisions including setting the Council Tax precept, approving the budget requirement and reviewing items referred for a decision by a sub-committee.



2. Population & Demographics

2.1. Population

As a county, Lancashire comprises 14 authority areas; within this there are 12 district councils in the Lancashire County Council area and two unitary authorities of Blackburn with Darwen, and Blackpool. As a whole, the usual resident population for Lancashire according to the 2011 Census was 1,460,900, this shows a growth in population of 3.3% or 46,200 people since the last Census in 2001.

The table below shows the population in the Lancashire 14 area's according to the 2011 census, this highlights that Blackburn with Darwen has the largest population of the 14 authorities (147,500) and the Ribble Valley is home to the smallest population (57,100).

District	Age band:					Total
	0-14	15-24	25-44	45-64	65+	
Burnley	16,000	11,100	22,700	22,900	14,200	87,000
Chorley	18,300	12,200	28,600	30,200	17,900	107,200
Fylde	11,200	7,500	16,700	22,100	18,300	75,800
Hyndburn	15,400	10,300	21,700	20,600	12,900	80,700
Lancaster	21,400	24,500	32,400	34,900	25,300	138,400
Pendle	17,300	11,200	23,700	23,000	14,400	89,500
Preston	25,100	24,600	38,900	32,400	19,200	140,200
Ribble Valley	9,800	6,300	12,600	17,100	11,600	57,100
Rossendale	12,300	8,200	17,900	19,100	10,500	68,000
South Ribble	18,600	12,800	28,100	30,100	19,300	109,100
West Lancashire	18,600	14,900	25,200	31,100	20,900	110,700
Wyre	16,000	12,000	22,600	30,700	26,600	107,700
Lancashire County (12 districts)	200,100	155,500	290,700	314,100	211,300	1,171,300
Blackburn with Darwen	32,100	19,900	41,800	34,600	19,100	147,500
Blackpool	23,700	17,100	35,500	38,400	27,100	142,100
Lancashire (14 authorities)	255,900	192,500	368,000	387,100	257,500	1,460,900

When comparing the 14 districts of Lancashire to the national averages for England and Wales, the statistics show a higher proportion of people living in Lancashire in the two oldest broad age

groups of 45-64 year-olds and 65+¹.

Analysis by age shows that, for the next eight years, the number of children aged 0 to 14 will rise and thereafter the number will decline. The working age population is predicted to start to decline within 5 years and the older population are predicted to continue to increase, with more in the 65 and over bracket each year as life expectancy increases over the period. The old age dependency ratio (number of people on state pension per 1,000 people of working age, is predicted to increase in every district over the period of the projection, with Fylde seeing the largest increase (496 in 2016 to 685 in 2041).

2.2. Population Projections

Expected population projections from the Office for National Statistics over the period of 2016-2041 show that for the Lancashire-14 area, a 2.5% increase is projected over the 25-year period, resulting in an expected population total of 1.52 million by 2041. For the Lancashire-12 area, the percentage increase is projected to be higher at 3.5%, with the number expected to reach 1.24 million. These increases have been revised down from the previous projections. The estimated increases for both areas are lower than the average for the North West, 6.4% as a whole, and well below the expected increase for England of 12.1%.

In contrast to the national trend, Blackburn with Darwen, Blackpool, Burnley, Hyndburn, Pendle and Preston, are predicted to see small population decreases between 2016 and 2041. Chorley is the only Lancashire authority with a projected increase higher than the North West or England average.

District	2016	2021	2026	2041	% change, number of years from 2016		
					5	10	25
Burnley	87,620.4	87,733.9	87,646.6	86,554.3	0.13	0.03	1.12
Chorley	114,266.0	120,102.6	124,825	133,042.4	4.98	8.83	15.18
Fylde	78,153.0	79,836.7	81,429.3	83,906.4	2.13	4.11	7.1
Hyndburn	80,392.0	79,853.9	79,221.1	77,398.5	0.67	1.47	3.79
Lancaster	141,723.0	143,213.8	144,834.4	146,016.3	1.05	2.17	2.98
Pendle	90,515.0	90,951.9	90,856.3	89,359.8	0.48	0.38	1.28
Preston	141,023.0	140,747.4	140,499.0	140,058.0	0.2	0.37	0.67
Ribble Valley	58,864.0	59,739.6	60,511.1	61,350.8	1.47	2.76	4.14
Rossendale	69,787.0	71,176.4	72,240.6	73,771.5	1.97	3.46	5.6
South Ribble	110,136.0	111,066.0	111,793.9	112,269.8	0.84	1.49	1.92
West Lancashire	113,061.0	113,946.8	114,888.9	116,920.6	0.78	1.6	3.36
Wyre	110,002.0	111,983.9	113,753.1	116,647.7	1.79	3.35	5.86
Lancashire County (12 districts)	1195542.40	1210352.90	1222499.30	1237296.10	1.23	2.23	3.43
Blackburn	146,462.0	148,575.0	148,000.5	146,110.8	1.43	1.04	0.24

¹<http://www.lancashire.gov.uk/lancashire-insight/population-and-households>

with Darwen							
Blackpool	139,983.0	138,347.9	137,253.6	136,502.6	1.17	1.97	2.52
Lancashire (14 authorities)	1481987.40	1497275.80	1507753.40	1519909.50	1.03	1.72	2.53

2.3. Household Projections

Household numbers in the Lancashire-12 area are projected to grow from an estimated 507,980 in 2016, to 551,312 by 2041, an increase of 8.5% (+43,332 households). This is significantly lower than the England growth rate of 17.3%.

Within the Lancashire-12 area, Chorley (+11,194, 23.2%), Fylde (+5,676, 15.5%) and Wyre (+5,510, 11.4%) are estimated to see the largest numeric increases in the area, although Ribble Valley (+3,113, 12.3%) and Rossendale (+3,453, 11.5%) are also projected to see percentage increases above 10.0%. Locally, only Chorley's percentage rise is estimated to be greater than the England average of 17.3%. Hyndburn (+700, 2.0%) and Preston (+1,342, 2.3%) are projected to see the lowest percentage growth in the Lancashire-12 area.

In the broader Lancashire-14 area, the number of households in Blackburn with Darwen is estimated to increase by 4.0% (+2,264 households), whilst in Blackpool the percentage increase of just 0.4% (+232 households) is the fourth lowest in England. Nine Lancashire-14 areas have some of the lowest estimated percentage increases in England by 2041, of 7.3% or lower. Overall, the number of households in the Lancashire-14 area is estimated to rise by 7.3% (+45,829) to 674,107 households by 2041.

Average household size

By 2041, in the Lancashire-12 area, the average household size is predicted to reduce from 2.3 to 2.18 people. For the Lancashire-14 area, a decrease is also projected, from 2.31 to 2.19 people. In England, the average household size is estimated to fall from 2.37 to 2.26 people.

Households aged 65 and over

Nationally, the percentage of households aged 65 and over is estimated to rise from 28.3% of the total in 2016, to 37.2% in 2041. In the Lancashire-12 area, the percentage is estimated to increase from 31.1% (158,154 households) to 41.3% (227,682 households) by 2041. Fylde (50.6%), Wyre (49.9%) and Ribble Valley (47.6%) are projected to have some of the highest percentages of households aged 65 and over in the country by 2041.

Household composition

One person households in the Lancashire-12 area are projected to rise by 17.9% to 193,978 households, or 35.2% of all households, by 2041, slightly higher than the England projected average of 33.1%. Fylde (40.3%), Preston (39.2%), Hyndburn (37.9%), Burnley (37.8%) and Pendle (37.2%) are projected to have some of the largest percentages of one person households in England in 2041. Blackpool (41.3%), in the Lancashire-14 area, is projected to have the sixth highest percentage of one person households in England (out of 326 local authority areas).

Households with dependent children in the Lancashire-12 area are predicted to fall by 7.7% (10,315 households) to 124,145 households, or 22.5% of all households, in 2041, lower than the projected England average of 24.7%. In the Lancashire-14 area, only Blackburn with Darwen (28.8%) is projected to have a percentage of households with depended children that is above the England average. Households with dependent children in the Lancashire-12 area are therefore predicted to form a smaller proportion of all households in 2041 (22.5%) compared with 2016 (26.5%), as would be expected from an ageing population.

Other households with two or more adults in the Lancashire-12 area are projected to increase by 11.6% (24,198 households), to 233,188 households (or 42.3% of all households) in 2041. In England, other households with two or more adults are projected to rise by 21.0% (1,971,391 households), to 42.2% of all households in 2041. The percentages for Preston (36.8%) and Hyndburn (37.7%) are projected to be the ninth and eighteenth lowest (out of 326 local authority areas) for other households with two or more adults in England in 2041. The percentages for Pendle (38.5%) and Burnley are projected to be in the lowest 11% of the rankings for this household type.

Chorley is forecast to see the largest numeric and percentage increases for one person households (+5,004 households, 35.5%) and other households with two or more adults (+5,527 households, 26.8%) in the Lancashire-14 area by 2041. For households with dependent children, only Chorley is predicted to see an increase between 2016 and 2041 in the Lancashire-14 area, rising by 664 households (4.9%). Despite the increase, the proportion of households with dependent children as a percentage of all households in Chorley is projected to fall from 28.0% in 2016, to 23.8% in 2041²

² <https://www.lancashire.gov.uk/lancashire-insight/population-and-households/households-and-housing/household-projections/>

2.4.Cultural Diversity

Ethnicity across the county is diverse; the largest ethnic group in the county identify themselves as being white (90%), whilst the black minority ethnic (BME) group form 10% of the population with Asian/Asian British making up 8% of this group.

District	Usual residents	All white	Mixed/multiple ethnic group	Asian/Asian British	Black/ Black British	Other ethnic group
Burnley	87,059	76,054	976	9,578	211	240
Chorley	107,155	103,833	1,016	1,710	401	195
Fylde	75,757	73,844	742	845	163	163
Hyndburn	80,734	70,778	696	9,007	106	147
Lancaster	138,375	132,342	1,356	3,732	628	317
Pendle	89,452	71,437	946	16,807	126	136
Preston	140,202	112,415	3,326	21,732	1,676	1,053
Ribble Valley	57,132	55,904	360	729	92	47
Rossendale	67,982	63,778	602	3,396	123	83
South Ribble	109,057	105,847	1,174	1,612	268	156
West Lancashire	110,685	108,603	866	913	174	129
Wyre	107,749	105,852	664	993	130	110
Lancashire County (12 districts)	1,171,339	1,080,687	12,724	71,054	4,098	2,776
Blackburn with Darwen	147,489	102,009	1,823	41,494	933	1,230
Blackpool	142,065	137,339	1,753	2,282	346	345
Lancashire (14 authorities)	1,460,893	1,320,035	16,300	114,830	5,377	4,351

Within the 14 Authority areas in Lancashire, the highest proportion of the population who are BME, is in Blackburn at a total of 45,480 (31%); this rate is three times greater than that of the Lancashire average. In contrast, Blackpool recorded a BME population that accounted for only 3% of its total population (4726 people)³.

According to the 2011 census, 95% of all households in Lancashire had English spoken by all the people within them aged 16 and over as a main language. The national average of households in England and Wales in this category was 91%.

³<http://www.lancashire.gov.uk/lancashire-insight/population-by-ethnicity>

2.5. Religion

The 2011 census recorded that across the 14 Authority areas in Lancashire, Christianity was the most popular religion with 67% of people in this classification; this is above the national average of 59.3%⁴. The second highest category recorded across Lancashire was of people stating no religion at 19% (national level 25.1%), followed by Muslim which was recorded at 6.6%. The Muslim population within Lancashire is higher than the national average of 4.8%, with the Blackburn with Darwen area having the third highest Muslim population across the 348 authorities within England and Wales.

District	All categories	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other	No religion	Not stated
Burnley	87,059	55,399	192	175	14	8,580	33	236	17,178	5,252
Chorley	107,155	80,732	275	196	45	1,130	18	337	18,418	6,004
Fylde	75,757	55,843	196	175	322	350	39	228	13,870	4,734
Hyndburn	80,734	53,602	162	70	7	8,336	38	249	13,700	4,570
Lancaster	138,375	91,124	540	446	119	1,767	100	658	33,833	9,788
Pendle	89,452	48,043	224	91	36	15,579	9	334	19,573	5,563
Preston	140,202	85,518	385	3,338	60	15,769	930	428	25,754	8,020
Ribble Valley	57,132	44,627	88	99	10	425	41	139	8,299	3,404
Rossendale	67,982	43,392	163	96	67	2,613	9	231	17,095	4,316
South Ribble	109,057	82,547	206	556	48	592	75	284	18,487	6,262
West Lancashire	110,685	84,337	141	229	62	276	87	216	19,029	6,308
Wyre	107,749	80,346	220	161	69	305	25	342	19,210	7,071
Lancashire County (12 districts)	1,171,339	805,510	2,792	5,632	859	55,722	1,404	3,682	224,446	71,292
Blackburn with Darwen	147,489	77,599	306	574	54	39,817	161	295	20,374	8,309
Blackpool	142,065	95,426	450	337	252	1,061	61	571	34,815	9,092
Lancashire (14 authorities)	1,460,893	978,535	3,548	6,543	1,165	96,600	1,626	4,548	279,635	88,693

⁴<http://www.lancashire.gov.uk/media/897579/census-2011-religion.pdf>

2.6. Workday Population

The 2011 census recorded the usual resident population of Lancashire at 1,460,893. A usual resident is anyone who, on census day, was in the UK and had stayed or intended to stay in the UK for a period of 12 months or more, or had a permanent UK address and was outside the UK and intended to be outside the UK for less than 12 months.

The workday population is a redistribution of the usually resident population to their place of work, while residents who are not in work remain at their area of residence. Within Lancashire the workday population recorded at the time of the 2011 Census was 1,444,612⁵.

District	Workday population	Usual resident population
Burnley	86,382	87,059
Chorley	95,094	107,155
Fylde	84,165	75,757
Hyndburn	75,915	80,734
Lancaster	134,430	138,375
Pendle	84,727	89,452
Preston	163,161	140,202
Ribble Valley	58,210	57,132
Rossendale	59,413	67,982
South Ribble	102,302	109,057
West Lancashire	108,497	110,685
Wyre	96,911	107,749
Blackburn with Darwen	151,566	147,489
Blackpool	143,839	142,065
Lancashire	1,444,612	1,460,893
North West	7,048,102	7,052,177

The table above shows that the workday population of Preston is 14% higher than the usual resident population; this ranks Preston at the 15th highest of the 348 authorities in England and Wales, with Manchester as the only North West Authority above (17.5%). Surprisingly Fylde is in 25th position as the third highest ranked in the North West just ahead of Liverpool, this can be partly attributed to the large workforce of BAE Systems at Warton.

In comparison the workday populations of Rossendale, Chorley and Wyre were all lower at -13%, -11% and -10% respectively, showing that a higher number of residents from these districts are travelling out to work in other places.

⁵<http://www.lancashire.gov.uk/media/897591/census-2011-workday-populations>

2.7. Ageing Population

Future population predictions for the Lancashire 14 Authority areas show that growth rates across the county are expected to have distinct differences. Chorley, Lancaster, Fylde and Rossendale are predicted to have the highest growth rates in population whereas in comparison Blackpool, Blackburn with Darwen, Burnley and Hyndburn are expected to have a population decrease⁶.

When carrying out further comparisons with predicted population levels by age group, one category that is expected to substantially increase across the county is that of those aged 65+. Statistics show that there are significant increases in predicted population groups over the age of 65 that become greater still as the age range increases. This culminates with the oldest age group (90+) being predicted to rise by 121% across the county over the next 17 years.

Population aged 65 and over, projected to 2035	2020	2025	2030	2035
Lancashire: People aged 65-69	66,400	71,900	81,100	81,000
Lancashire: People aged 70-74	69,800	62,400	67,900	77,000
Lancashire: People aged 75-79	50,300	62,700	56,600	62,100
Lancashire: People aged 80-84	35,700	41,600	52,600	48,200
Lancashire: People aged 85-89	21,400	25,300	30,500	39,300
Lancashire: People aged 90 and over	12,200	14,900	19,100	24,800
England: People aged 65-69	2,788,400	3,076,100	3,533,400	3,594,900
England: People aged 70-74	2,823,000	2,626,200	2,909,300	3,353,900
England: People aged 75-79	2,033,300	2,555,400	2,397,200	2,672,500
England: People aged 80-84	1,485,100	1,711,700	2,178,300	2,067,300
England: People aged 85-89	924,300	1,079,900	1,284,900	1,662,300
England: People aged 90 and over	554,600	677,900	863,800	1,108,400

This growing number of people aged over 65 and above present's significant challenges not only for LFRS, but also for our partners as demand increases for services. To address this LFRS works collaboratively with partners to identify and support the most vulnerable individuals within our communities. At a community level delivering a joined up service with our partners ensures the most effective assessment of need is undertaken.

⁶<http://www.lancashire.gov.uk/media/898533/popprojection-2039-article.pdf>

In addition, other workstreams are ongoing to help reduce risk amongst this group of vulnerable people in Lancashire. Our prevention department have been working hard leading Dementia Friends training. This improves knowledge and understanding of staff resulting in better outcomes when working with someone living with dementia.

2.8. Deprivation

Deprivation is measured across England through the combined Index of Multiple Deprivation 2015 (IMD 2015) which is the official measure of relative deprivation for small areas known as Lower Level Super Output Areas (LSOAs) in England.

The English Indices of Deprivation are based on separate indicators which are organised across seven distinct domains:

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

This allows all 32,844 LSOAs to be ranked according to how deprived they are in relation to each other.

Types of deprivation are often associated with each other, for example health combined with the influence of an individual's living environment and lifestyle choices can all add to vulnerability. These in turn can present hazards and risks that an individual may be susceptible to due to their circumstances. In 2015 Lancashire had 31 (3.3%) of its LSOAs in the top 1% of the most deprived neighbourhoods in England. These included nineteen in Blackpool, four in Burnley, three in Blackburn with Darwen, three in Lancaster, one in West Lancashire and one in Wyre.

2.9. Fuel Poverty

Fuel poverty is defined through low income and high energy cost; a household is considered to be fuel poor if they have fuel costs that are above the national median level average, meaning if they were to spend the amount required on fuel, they would be left with a residual income below the official poverty line.

The 2016 fuel poverty statistics indicate that 12.9% of households (82,360) were fuel poor in the Lancashire-14 area, and 12.3% (63,207) in the Lancashire-12 area; both are higher than the England average (11.1%). The Lancashire-14 proportion has increased by 0.7% from 2015 and the gap between Lancashire-14 and England has also widened from 1.2% to 1.8%.

Blackburn with Darwen (14.4%), Blackpool (15.9%), Burnley (15.1%), Hyndburn (14.1%), Lancaster (13%), Pendle (15.8%) and Preston (14.1%) were in the worst 20% of local authorities in England for fuel poverty. Fylde had the lowest proportion of fuel poor households (9.7%). Blackpool had the largest number of households who were fuel poor (10,599) in the Lancashire-14 area. In the Lancashire-12 area, Preston had the largest number of fuel poor households (8,380). Ribble Valley had the fewest fuel poor households (2,495).

During the 2016/17 financial year, there were 304,750 recipients of the winter fuel payment in the Lancashire-14 area. Blackpool (30,030), Wyre (30,340) and Lancaster (29,260) had the largest number of recipients in the Lancashire-14 area, whilst Rossendale (13,230) had the lowest number.

The table below highlights the number of households across Lancashire's 14 authorities considered to be within fuel poor households.

Area	Estimated number of all households	Estimated number of fuel poor households	Proportion of households fuel poor (%)
Burnley	38908	5868	15.1
Chorley	46543	4911	10.6
Fylde	36102	3491	9.7
Hyndburn	35,578	5,008	14.1
Lancaster	59,986	7806	13.0
Pendle	38706	6102	15.8
Preston	59623	8380	14.1
Ribble Valley	24960	2495	10.0
Rossendale	30070	3667	12.2
South Ribble	47780	5016	10.5
West Lancashire	47018	5160	11.0
Wyre	49001	5303	10.8
Blackburn with Darwen	59367	8554	14.4
Blackpool	66718	10599	15.9
Lancashire	640,360	82,360	12.86%
North West	3,117,298	399,344	12.81%

Fuel poverty can lead to a range of adverse effects from health issues including a rise in winter deaths which may be attributed to people living in cold unheated homes, to an increase in fire risk from people using what are deemed to be unsafe forms of heating (which are often poorly manufactured) or from counterfeit electrical products.

Response:

Fuel poverty can lead to a range of adverse effects from health issues including a rise in winter deaths which may be attributed to people living in cold unheated homes, to an increase in fire risk

from people using what are deemed to be unsafe forms of heating (which are often poorly manufactured) or from counterfeit electrical products.

LFRS continues to develop its preventative activities which look to improve our community's health and wellbeing to keep them safer in their homes.

The service has implemented an extension to the Home Fire Safety Check visit for those whom are at higher risk. This is known as a 'Safe and Well' visit. The Safe and Well visit aims to reduce Fire and Health risks amongst higher risk members of the public. If our staff identify any health related concerns then we will contact partner agencies such as the Alzheimer's society for them to put pathways in place for the individual.

With regards to fuel poverty, LFRS runs an annual winter safety campaign which aims to help those who are most vulnerable to fuel poverty in our communities. Individuals who are deemed at high risk are offered a free Home Fire Safety Check and through our continued work with our partners we run a variety of local campaigns designed to target those specific groups.

3. Response Risk

3.1. Fires in the home

Statistics from March 2017 show that in the combined 14 authority areas of Lancashire, there were over 672,140 dwellings⁷ this represents 2.8% of the total for England. When broken down by district the largest stock of dwellings belongs to Blackpool with over 71,280, whilst Ribble Valley recorded the lowest number with 26,370. Across England each dwelling is assigned to one of eight council tax bands; Band A is the lowest band (for properties up to £40,000) and Band H is currently the highest band (for properties of £320,001 and above). When comparing Lancashire's dwellings (categorised by council taxes) with national averages, statistics show that the county has a higher than average proportion of dwellings in the lowest A band. On average just under 24.5% of all dwellings in England were in council tax band 'A'. In Lancashire however, over 39.9% of the county's properties belong within this bracket. Once broken down further to a district level, the statistics become even more striking, with the Burnley and Pendle districts both housing over 60% of dwellings in the lowest bracket.

⁷<http://www.lancashire.gov.uk/lancashire-insight/population-and-households/households/dwelling-stock-by-council-tax-band.aspx>

The table below shows Lancashire Dwellings by Council Tax Bandings⁸

District	Band A	Band B	Band C	Band D	Band E	Band F	Band G	Band H	Total
Burnley	25000	5360	6120	2750	1250	320	130	20	40950
Chorley	14770	11310	9360	6620	4820	2140	890	70	49980
Fylde	6950	6340	8780	7060	4750	2540	1560	130	38110
Hyndburn	21740	5540	5510	2680	860	270	170	10	36780
Lancaster	22430	16100	12320	6360	3920	1940	830	80	63980
Pendle	24760	4590	4330	3180	1750	950	530	40	40130
Preston	28980	12220	9680	6410	2630	1340	900	60	62220
Ribble Valley	3690	5080	5040	4640	3580	2210	1910	220	26370
Rossendale	16230	5000	4150	3340	1950	640	440	40	31790
South Ribble	9970	13040	12120	7860	3940	1580	520	30	49060
West Lancashire	14530	8840	9750	7030	4810	2470	1570	90	49090
Wyre	11850	11940	12370	7330	4880	2320	1010	70	51770
Lancashire 12 Districts	200900	105360	99530	65260	39140	18720	10460	860	540220
Blackburn with Darwen	35350	9270	8340	4260	2000	770	580	70	60640
Blackpool	31880	20820	11280	4640	1840	560	250	30	71300
Lancashire 14 Authorities	268140	135450	119140	74140	42970	20070	11290	960	672140

Projected growth for the number of households in England by 2039 shows an increase of 23.1% over the 2014 estimate⁹. Lancashire in comparison across the 14 authority area shows a projected growth rate of 10.4% with the total number of households expected to reach 692,000 (this is a downward trend from the 2012 projections).

When viewing the statistics on a district level, the highest growth rates in household numbers are projected to occur in the districts of Chorley (24.6%), Lancaster (15.2%) and Fylde (16.6%), with the lowest projected increases occurring within the districts of Blackpool (4.7%), Hyndburn (3.6%) and Burnley (3.4%).

Whilst the presence of additional housing does increase fire risk, the compulsory fitting of smoke alarms in all new build houses is in place to mitigate the risk by giving early warning to the occupants. Furthermore, LFRS periodically undertake reviews to take a considered look at the emergency cover we provide in terms of where our fire engines, equipment and crews are situated. This ensures that the effects of changes through new large scale developments are

⁸Source Valuation Office Agency – [Dwelling stock by council tax band, 2015](#)

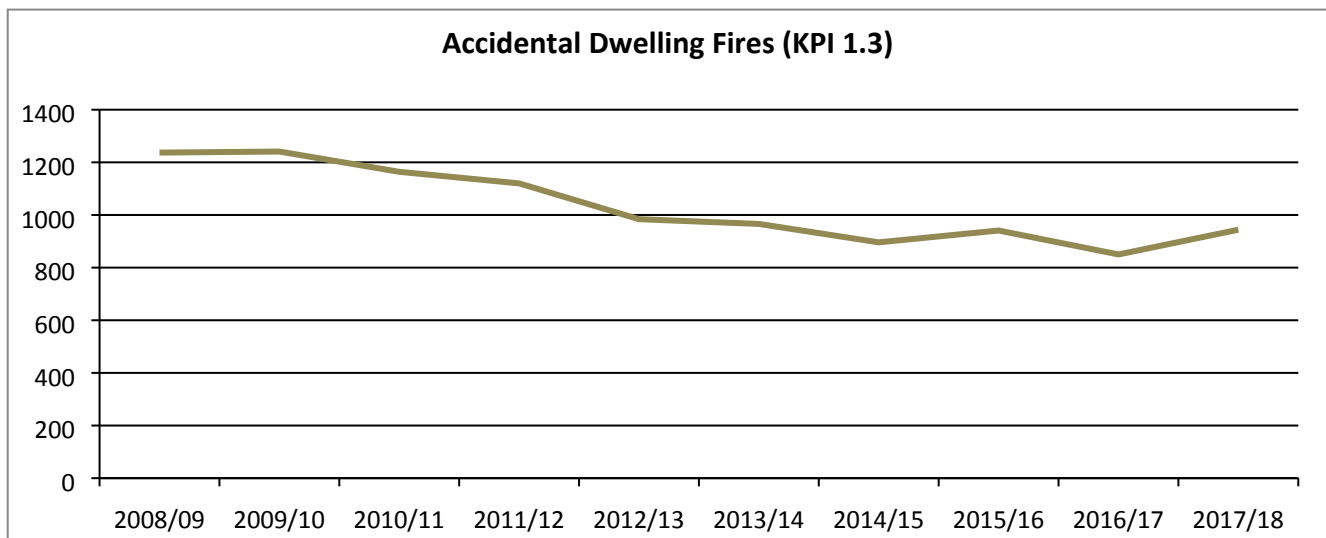
⁹ <http://www.lancashire.gov.uk/media/898813/houseprojections-2014-based-to-2039.pdf>

considered, so that we can continue to provide an effective level of emergency response.

Whilst the impact any fire can be devastating, it is to be reputed that the prevention activities that LFRS have delivered across Lancashire over the last 10 years, has played a significant part in the reduction of accidental dwelling fires.

The below graph highlights that the number of accidental dwelling fires that LFRS have attended between the dates of 1st April 2008 to 31st March 2018 has seen a reduction of 23.7% (Accidental Dwelling Fires KPI 1.3)

Total accidental dwelling fires by fiscal year



The following chart shows accidental dwelling fires attended by LFRS from 1st April 2008 to 31st March 2018 broken down by district level. This highlights that over a 10 year period the highest number of accident dwelling fires occurred within the Blackpool area, whilst in comparison the lowest number of accidental dwelling fires occurred within the Ribble Valley.

District	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Total
Blackburn with Darwen	114	103	123	118	107	87	71	113	90	97	1023
Blackpool	202	217	185	190	183	159	155	148	142	128	1709
Burnley	82	91	79	73	64	65	72	57	66	61	710
Chorley	66	59	63	59	55	69	55	43	49	45	563
Fylde	55	36	54	34	28	41	31	29	35	42	385
Hyndburn	85	94	76	68	63	57	50	52	65	63	673
Lancaster	110	107	101	99	90	100	95	96	81	105	984
Pendle	54	58	85	86	64	52	55	63	43	59	619
Preston	143	137	138	145	110	105	98	108	74	112	1170
Ribble Valley	34	49	22	27	22	22	23	26	26	32	283
Rossendale	65	56	45	46	30	36	27	32	31	34	402
South Ribble	65	69	48	47	47	46	57	52	58	46	535
West Lancashire	80	93	79	64	61	62	57	64	40	50	650
Wyre	82	70	65	64	59	62	50	58	49	69	628
Total	1237	1239	1163	1120	983	963	896	941	849	943	10334

Historical statistics show that the more affluent an area is, the fewer ADFs have occurred. However, this trend needs to be monitored as change may be imminent due to the increase in ageing population levels.

3.1.1. Living Alone

The 2011 census recorded that across the 14 Lancashire Districts there were 81,759 (13.2%) of households with an adult living alone aged 65 or over; this is above both the North West average (12.8%) and the England and Wales average of 12.4%. Out of the 348 local authorities in England and Wales, Fylde was recorded as the 12th highest authority with a percentage of 16.9% followed by Wyre at 19th highest with 16.4%¹⁰.

In comparison Blackburn with Darwen recorded the lowest percentage of households with one person living alone aged 65 or over within the Lancashire 14 area, at 10.9%, followed by Preston, Rossendale and Chorley at 11.4%, 11.6% and 11.8% respectively.

Living alone may not necessarily affect an individual's fire risk; however living alone combined with specific demographic characteristics can do so. Age, mental health, physical wellbeing and

¹⁰<http://www.lancashire.gov.uk/media/897533/census-2011-one-person-households.pdf>

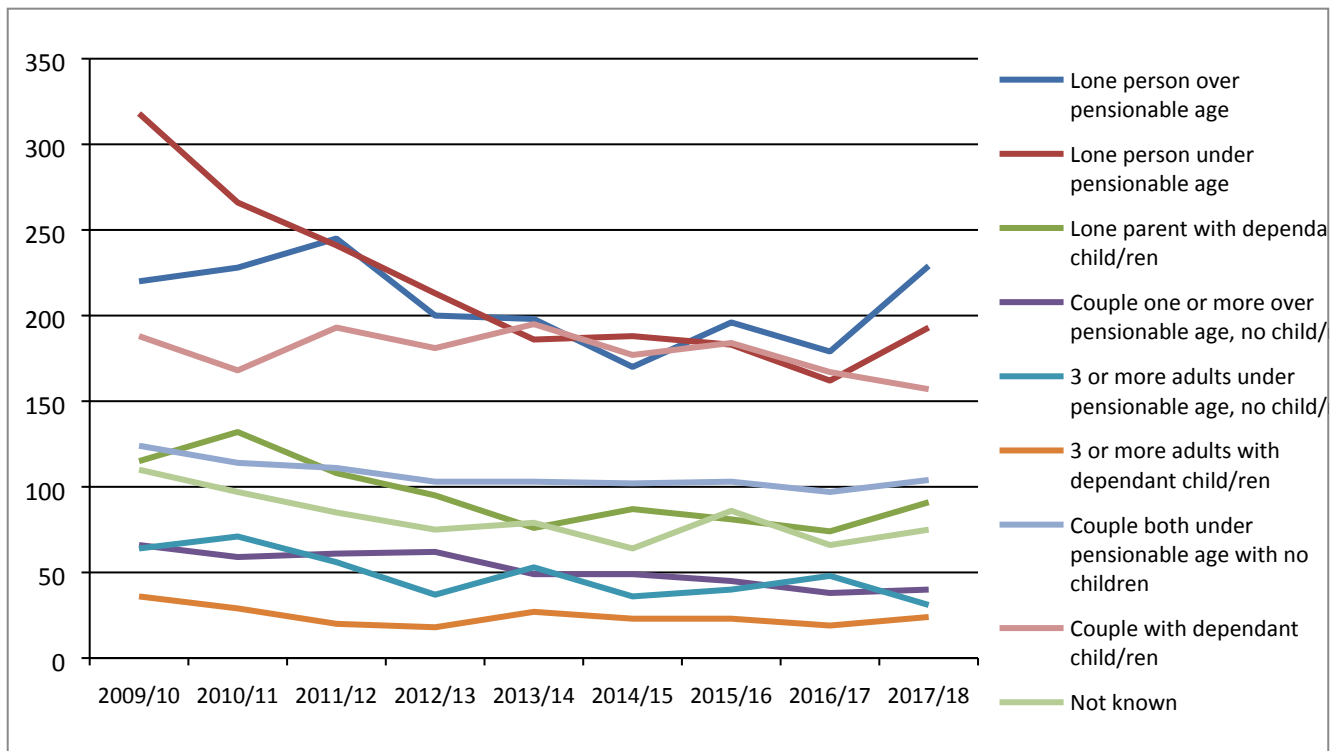
living environments can all play a part in contributing to an individual's circumstances for them to be considered at a higher risk of death or injury caused by fire.

When looking at fire risk the chart¹¹ below shows the total number of Accidental Dwelling Fire's (ADFs) recorded against occupancy type. Note that this data is only available post IRS (1st April 2009).

Occupancy type	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Total
Lone person over pensionable age	220	228	245	200	198	170	196	179	229	1865
Lone person under pensionable age	317	266	241	213	186	188	183	162	193	1949
Person <u>not</u> recorded as 'lone person'	702	669	634	570	579	538	562	508	522	5284
Total	1239	1163	1120	983	963	896	941	849	944	9098

The data highlights that 42% of ADF's which occurred within a dwelling had a lone occupier. This data is broken down further in the graph below which highlights all recorded occupancy types.

¹¹Information Recording System(IRS)



At present those living alone over pensionable age fall in the highest category for accidental dwelling fires. Predicted populations levels show that by 2035 Lancashire will have 19% more adults living alone within the 65-74 year old age bracket than in 2017 and 60.9% more adults living alone in the 75+ age bracket, making it likely that this category will continue to increase (based on professional judgement). A sudden change in circumstances for older people who may experience the death of a partner or loved one can not only place them at risk of social isolation due to a lack of social interaction with friends and family but also increases their risk of fire due to a change in their living circumstances.

The following table highlights the predicted population levels for individuals aged 65 and over forecasted to be living alone up to 2035.

Total population aged 65 and over predicted to be living alone	2017		2020		2025		2030		2035
	65-74	75+	65-74	75+	65-74	75+	65-74	75+	65-74
ENG	1,383,760	2,262,937	1,413,070	2,463,378	1,435,200	2,952,271	1,621,600	3,287,253	1,749,830
North West	186,050	298,070	189,040	320,467	189,880	380,110	212,590	417,758	225,290
Lancs (14) District	37000	58732	37370	64290	37060	77624	41320	85814	44020
Burnley	2,340	3,365	2,340	3,650	2,290	4,471	2,440	4,817	2510
Chorley	3,330	4,627	3,330	5,292	3,260	6,812	3,710	7,633	4090
Fylde	2,760	4,932	2,780	5,441	2,830	6,486	3,240	7,097	3430
Hyndburn	2,140	3,114	2,110	3,399	2,010	4,159	2,190	4,539	2340
Lancaster	3,860	6,506	3,890	6988	3,880	8,101	4,320	8861	4540
Pendle	2,400	3,426	2,480	3,718	2,420	4,607	2,580	5,082	2710
Preston	2,840	4,749	2,910	4973	2990	5,672	3,390	6,269	3560
Ribble Valley	1,910	3053	1,940	3,433	1,910	4,159	2,160	4,600	2290
Rossendale	1,930	2,517	1,960	2,802	1,940	3,562	2,110	4,098	2260
South Ribble	3,220	5034	3,250	5,577	3,120	6,751	3,490	7,416	3670
West Lancs	3,410	5,441	3,390	6,011	3,310	7,185	3,630	7809	3780
Wyre	3,880	6,981	3,870	7,524	3,850	8,698	4,300	9,275	4610
Unitary Authorities									
Blackburn With Darwen	3140	4,464	3,270	4,688	3,250	5,577	3,580	6,181	3860
Blackpool	3,890	6,567	3,790	6764	3,700	7687	4,150	8,101	4430

The following chart highlights the total number of fire related fatalities that have occurred over a ten year period (1st April 2008 – 31st March 2018), by age band within Lancashire¹².

Year	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
2008/2009			1	1		1	1	1	3	1	9
2009/2010				2	1			1	2	1	7

¹² Incident Recording System

2010/2011					2		2			3	7
2011/2012					1		1	1	3		6
2012/2013			1				1	2	1	1	6
2013/2014					1	2			1		4
2014/2015					1		1	1	1		4
2015/2016					1	1	2	1	1		6
2016/2017		1						1	1		3
2017/2018						1		2	3		6
Total	0	1	2	3	7	5	8	10	16	6	58

This reveals that of the 58 fire related fatalities that occurred within a 10 year period, 69% of victims were aged 60 or older.

When analysing the data further, the statistics below show that of the 43 fire related fatalities that occurred over the period of 1st April 2009 – 31st March 2018*, 53.5% of fatalities were of a lone person over pensionable age, with 88.4% of all fatalities involving a lone person.

(* Data not available pre-IRS recording)

Year	Lone person over pensionable age	Lone person under pensionable age	Total Lone person Fatalities	Total Fatalities
2009/2010	3	3	6	7
2010/2011	5	2	7	7
2011/2012	4	1	5	6
2012/2013	3	2	5	6
2013/2014	1	2	3	4
2014/2015	1	1	2	4
2015/2016	2	3	5	6
2016/2017	0	0	0	3
2017/2018	4	1	1	6
Total	23	15	38	49

3.1.2. High Rise Dwellings

The Grenfell Tower fire occurred on 14 June 2017 claiming the lives of 72 people at the North Kensington tower block. Over 70 others were injured and 223 people escaped. It is the deadliest structural fire in the United Kingdom since the 1988 Piper Alpha disaster and the worst UK residential fire since the Second World War. The fire is currently subject to a public inquiry, police investigation and coroner's inquests.

Building regulations are currently under review in the light of the fire due to concerns with the rules and their enforcement and concern has spread to fire safety issues with many other buildings.

On 30 August 2017, the Department for Communities and Local Government published the terms of reference for the Independent Review of Building Regulations and Fire Safety. This independent review was led by Dame Judith Hackitt, who is a senior engineer and civil servant with experience as the Chair of the Health and Safety Executive. The two main aims of the review

are firstly to develop improved building regulations for the future, with a focus on residential high-rise blocks, and secondly to provide reassurance to residents that their homes are safe.

On 18 December 2017, Hackitt published her initial report. She described the entire building regulatory system as "not fit for purpose" and made interim recommendations for significant change. The final report was published on 17 May 2018, outlining a number of key failings and recommendations. Recommendations will be reconsidered after the conclusion of the public inquiry.

Currently running parallel to the Hackitt review is the Industry Response Group (IRG) that is tasked with assuring competence across the sector of those involved with high rise building. This ranges from product procurement (cladding, building materials etc.) to architects and designers to fire safety officers. There is a wide range of working groups to analyse the competencies of each area.

Response:

Lancashire Fire and Rescue Service (LFRS) Protection department has undertaken a review of all high rise premises within the county. All buildings were inspected and fire safety advice given where required. Three buildings in Lancashire were identified with similar 'ACM' cladding to the Grenfell Tower but all 3 are under 18m and not included as part of government high-rise inspection programme. However, fire safety staff have inspected these buildings regardless. In respect of identified high rise buildings in Lancashire, all are part of the service delivery preparedness activities, which includes a 72d inspection, which in a practical sense is a site specific risk assessment.

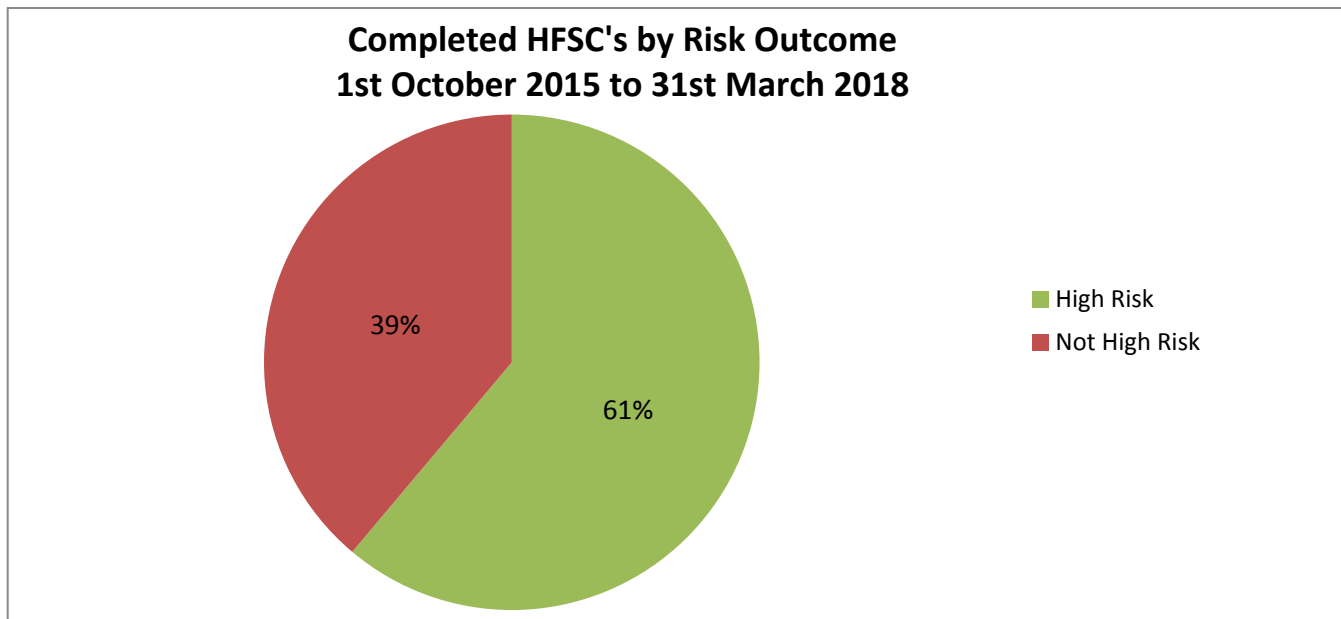
3.1.3. HFSC's

The Home Fire Safety Check Service (HFSC) is LFRS's primary preventative action; it is a free service to all members of the public and is delivered throughout Lancashire. Historically the HFSC was developed to deliver fire safety advice to the public within their homes; this core preventative activity coupled with the LFRS brand image has enabled our staff to deliver a service to some of the most vulnerable individuals within the community.

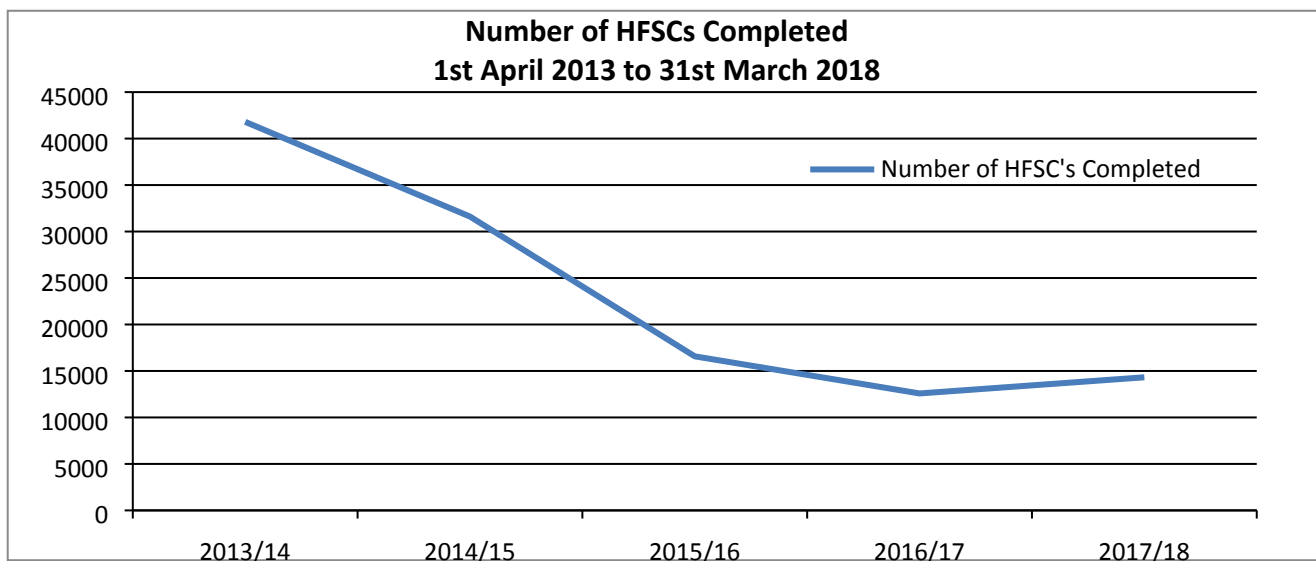
Since 2001, LFRS has delivered almost 520,000 HFSC's, with advice being given through a tailored risk assessment process. In October 2015 a change to the approach of the HFSC service was implemented to ensure that those who are most vulnerable to fire within the community receive an enhanced level of advice and service.

Risk is calculated through a comprehensive risk assessment process carried out either via our website or by our Contact Centre, which has been established by the Service so that all calls for HFSC requests are dealt with by trained staff. Following the assessment, appointments are made for those referrals assessed as high risk, and LFRS personnel will then visit the property to give targeted support and advice to those deemed most vulnerable from death or injury caused by fire. If however a referral is deemed to be low risk, we will issue tailored fire safety advice specific to the individual needs of the service user via email or post.

The chart below highlights HFSC visits undertaken since our revised approach was implemented and gives an indication of the split between high and not high risk referrals.



The chart below shows the number of HFSC's that LFRS has delivered to the public within their homes over the last five calendar years.



Response:

LFRS has now considered further opportunities to broaden and shape our HFSC service. This is in response to improved opportunities to collaborate and work in partnership with Health Agencies, the Local Authority and Third Sector Services. This revised approach is in line with the Chief Fire Officers Association (CFOA) Health Strategy 2015-19 and delivered across the service.

By working with our partners we have built on the current HFSC service to include advice and interventions that address a broad scope of risk, this will not only look to further reduce fire risk but will also help to improve health and wellbeing by maximising the opportunity to promote improved health outcomes and reduce harm.

By developing our HFSC service, we will also aim to assist in reducing pressures and demands for our partners, and should identify more of the people in greatest need so that, through working in partnership, we are able to deliver better outcomes for the communities we serve.

In order to ensure that the HFSC service both reduces the risk of a fire related incident and delivers an improved outcome in relation to the health inequalities that exist across the county, LFRS has participated in a national pilot scheme coordinated through the National Fire Chiefs Council (NFCC) and Public Health England (PHE) which has formed our new extension to HFSC visit known as the Safe and Well Visit.

The Standard Evaluation Framework (S.E.F.) has drawn together six Fire and Rescue Services in determining the most efficient model of service delivery and has developed policy that will shape a broader preventative offer in contributing to the increased demand faced across the Public Sector.

3.2. Fires in Commercial Buildings

Commercial buildings are defined as all non-domestic properties and include locations such as hospitals, schools, leisure facilities, care homes, hotels, offices, shops and premises such as factories and chemical plants.

In 2016, there were over 2.8 million active VAT and/or PAYE registered enterprises in the United Kingdom, of which 276,520 (9.8%) were in the North West. The Lancashire-14 area accounted for 19.5% of the regional total with 54,045 active enterprises. The Lancashire-12 area had 44,775 active VAT and/or PAYE registered enterprises.

Preston had the largest number of active VAT/PAYE registered enterprises (5,565) in the Lancashire-14 area in 2016; Hyndburn (2,455) had the lowest.

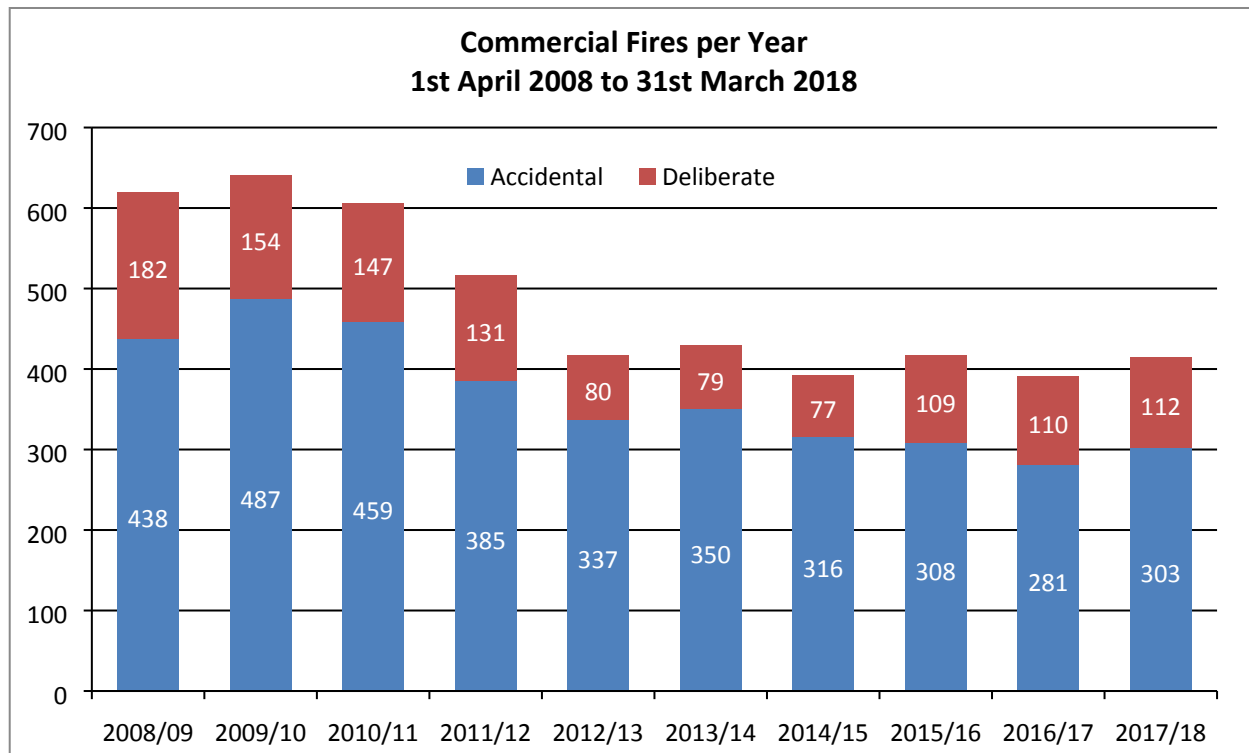
There were 61 active businesses registered for VAT/PAYE per 1,000 persons aged 18 to 74 in the UK in 2016 and 54.2 businesses in the North West. The Lancashire-12 area (53.2) and the Lancashire-14 area (51.9) had lower ratios.

Ribble Valley (74.6) had by far the greatest number of businesses per 1,000 population aged 18 to 74 in the Lancashire-14 area in 2016, followed by Fylde (63.1), whilst Lancaster (44.4), Hyndburn (44.1) and Blackpool (42.8) had the lowest.¹³

Statistics show that over the period of the last 10 years LFRS has responded to twice as many accidental dwelling fires (ADF'S) than commercial building fires. However, commercial buildings still pose a significant risk as they have the potential to be larger than domestic fires, requiring significantly more resources, and with the possibility of inflicting a massive impact on the communities to which they belong.

¹³ <https://www.lancashire.gov.uk/lancashire-insight/economy/businesses-and-economic-wealth/business-demography/>

The following table shows the number of commercial fires that LFRS have attended over the last 10 years categorised by either accidental fire or deliberate fire.



This highlights that the number of commercial fires recorded as a whole has dropped by 33% since 2008. Fires recorded as accidental have decreased by 31% over the last 10 years whilst deliberate commercial fires have reduced by 38%.

To put commercial fire activity into context the table below shows overall pump attended activity levels across Lancashire over the same period:¹⁴

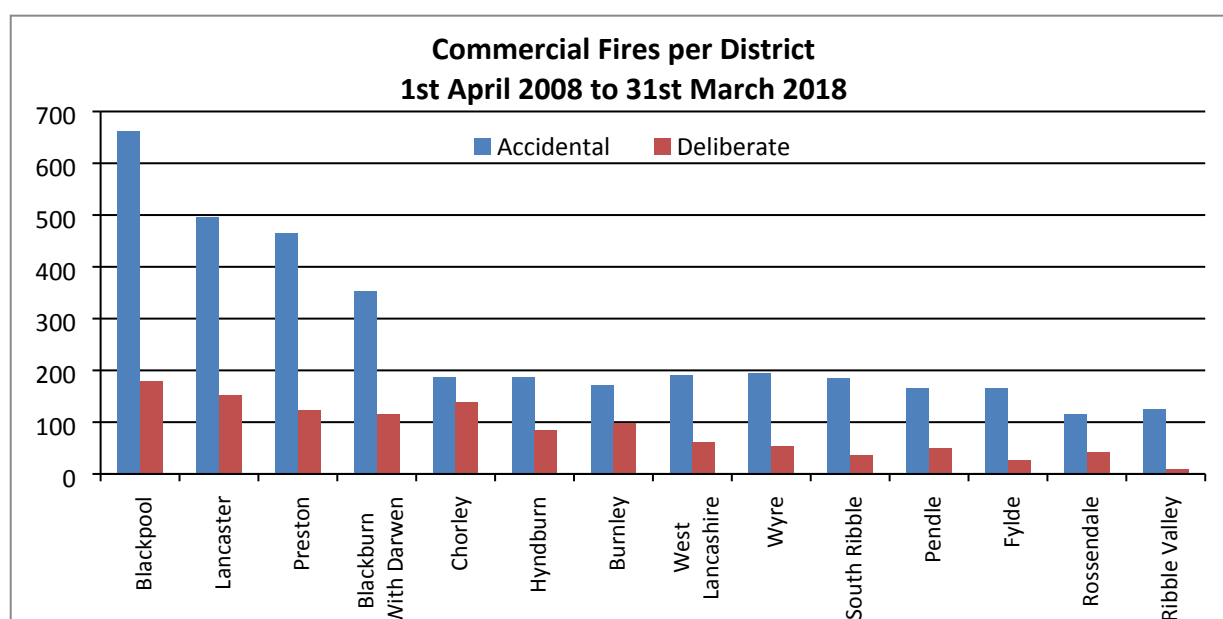
Year	False Alarm	Secondary Fire	Primary Fire ¹	Special Service	Chimney Fire	Total	Commercial Fires
2008/09	9680	5289	3479	2319	155	20922	620
2009/10	9625	4813	3150	2110	161	19859	641
2010/11	9088	4759	2900	2147	139	19033	606
2011/12	7363	3995	2630	1886	130	16004	516
2012/13	6488	2848	2216	2169	147	13868	417
2013/14	6246	3444	2207	2183	86	14166	429
2014/15	6216	2778	2129	1985	122	13230	393
2015/16	6468	2993	2170	3696	95	15422	417
2016/17	7078	2701	2109	3171	98	15157	391
2017/18	7385	2853	2176	3354	70	15838	415
Total	75,637	36,473	25,166	25,020	1,203	163,499	4,845

NB The total number of Primary fires is inclusive of commercial fires

When looking at commercial fires on a district level the statistics show that whilst Preston is the largest district for businesses, Blackpool has had the most commercial building fires over a 10 year period with 43% more than Preston and 80% more than Blackburn with Darwen.

The graph below highlights the number of commercial building fires that have occurred over the last 10 years (April 2008 March 2018) by district.

¹⁴ Management Information System (MIS) Pre 2009, Incident Recording System (IRS) post 2009



A fire in a commercial building has the potential to lead to devastating consequences; from multiple job losses owing to the loss of the building and its contents, to the loss of a building upon which a community is reliant, to the worst case scenario of the loss of life. Therefore all fire and rescue services have a legal duty to enforce the requirements of the Regulatory Reform (Fire Safety) Order 2005 (RRO), which requires that a suitable fire risk assessment is undertaken on a commercial building and that appropriate measures are then undertaken to prevent fires and protect against death and injury.

Response:

As we remain committed to providing the best possible service to our communities, LFRS has teams of dedicated Fire Safety Inspecting Officers and Business Safety Advisors, who work in close collaboration with statutory partners along with the business owners of Lancashire. This ensures that places of work, commercial premises and public access buildings are safe from fire and other types of incident. By undertaking audits of Fire Risk Assessments, information is gathered to provide the responsible persons of a premise with suitable guidance and identify any remedial actions that are required to ensure they, and the premises, comply with fire safety regulations.

The audit information is then inputted into our comprehensive risk based database. By capturing the data, Fire Safety Inspecting Officers are able to identify high risk premises and plan a risk based inspection programme.

Our Fire Safety Inspecting Officers will always look to educate, inform and advise businesses to support them to make informed decisions and take the appropriate measures to become compliant with legislation. However, if necessary, we will also use our enforcement powers to ensure public safety. Any businesses that do not comply with the law can expect to be subject to a robust enforcement approach and possible prosecution proceedings.

Furthermore, in further support of the businesses of Lancashire, LFRS has now remodelled its

Protection function to include Business Safety Advisors; these dedicated resources have been appointed to assist and support businesses with fire safety, business continuity and the measures they need to incorporate to ensure their premises are as safe as possible.

In addition to the detailed work undertaken by our Fire Safety Inspection teams, Operational Crews also visit commercial properties to gather Site Specific Risk Information. This information is used to provide the key details required should an incident occur at the premises with an aim to minimise the damage to the site whilst keeping our staff as safe as possible.

3.2.1. Primary Authority Schemes

The Primary Authority Scheme (PAS) came into operation in April 2009. This is a statutory scheme established by the Regulatory Enforcement and Sanctions Act 2008 ('RES Act') as amended in the Enterprise Act 2016 to allow a legally recognised partnership between businesses and a single local authority to ensure consistency of regulation with an aim to reduce duplication of inspections and paperwork. Fire Safety became part of the scheme in April 2014 in England & Wales (not Scotland/Northern Ireland).

The aim of the fire service's PAS is to develop effective partnerships with businesses and achieve national consistency in delivering fire safety advice whilst reducing the risk of fire to business.

Key elements of Primary Authority Schemes allow businesses that participate to benefit from better working relationships with local regulators, as a greater understanding of the business and its sector can improve the focus of inspections and ensure that any issues are dealt with proportionately. Other benefits of the scheme include a single point of contact with the local regulatory system, more effective regulation, improved targeting for enforcing authorities and improved compliance.

LFRS currently have 10 Primary Authority Partnerships with Barchester Healthcare Homes Ltd, Four Seasons Healthcare Limited, Amber Taverns Ltd, E.H. Booth & Co Ltd, Torus Housing Group (Torus62), Regenda Housing, Warwick Estates, Daniel Thwaites, Progress Housing and PDSA Student Roost and are in discussion with a further seven companies who have expressed an interest in joining the scheme.

3.3. Deliberate Fires

Inevitably when thinking of deliberate fires the term arson is often used, this is the act of using fire to destroy or damage any property belonging to another, or being reckless as to whether any such property would be destroyed or damaged. However, there are many different reasons why individuals or groups display fire-setting behaviour, from curiosity to anti-social behaviour to mental health issues; the term 'deliberate fire setting' covers a wider proportion of scenarios. Regardless of the reason a deliberate fire can cause significant damage to property, communities, the economy and in the worst case scenario's cause injury or death.

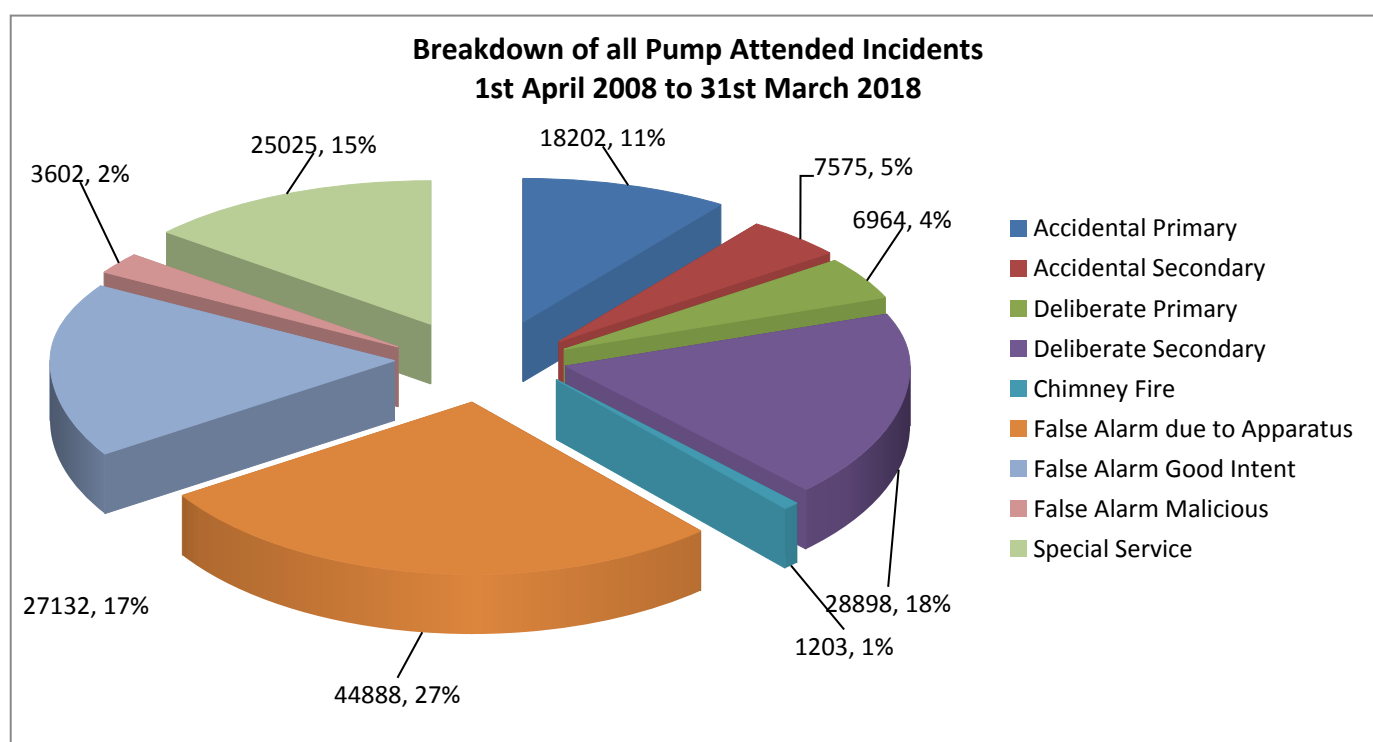
From a fire service perspective deliberate fires are recorded in two categories; deliberate primary

fires and deliberate secondary fires;

- A deliberate primary fire is any fire that is started intentionally involving property (including non-derelict vehicles) and/or casualties and/or involves 5 or more fire appliances.
- A deliberate secondary fire is any fire started intentionally confined to non-property locations such as derelict buildings, single trees, refuse containers, abandoned vehicles etc attended by four or fewer fire appliances and which did not involve casualties, rescues or any form of escape.

Through the use of our Incident Recording System (IRS) and Geographical Information Systems (GIS) the service is able to scan for trends in anti-social and arson fire setting. By doing this areas can be quickly identified through emerging trends, meaning prevention activities can be planned and undertaken, often with our partners. Activities can include anything from removal of rubbish to increased youth engagement activities, all with an aim to reduce the incidence of deliberate fires and help our partners build stronger more sustainable communities.

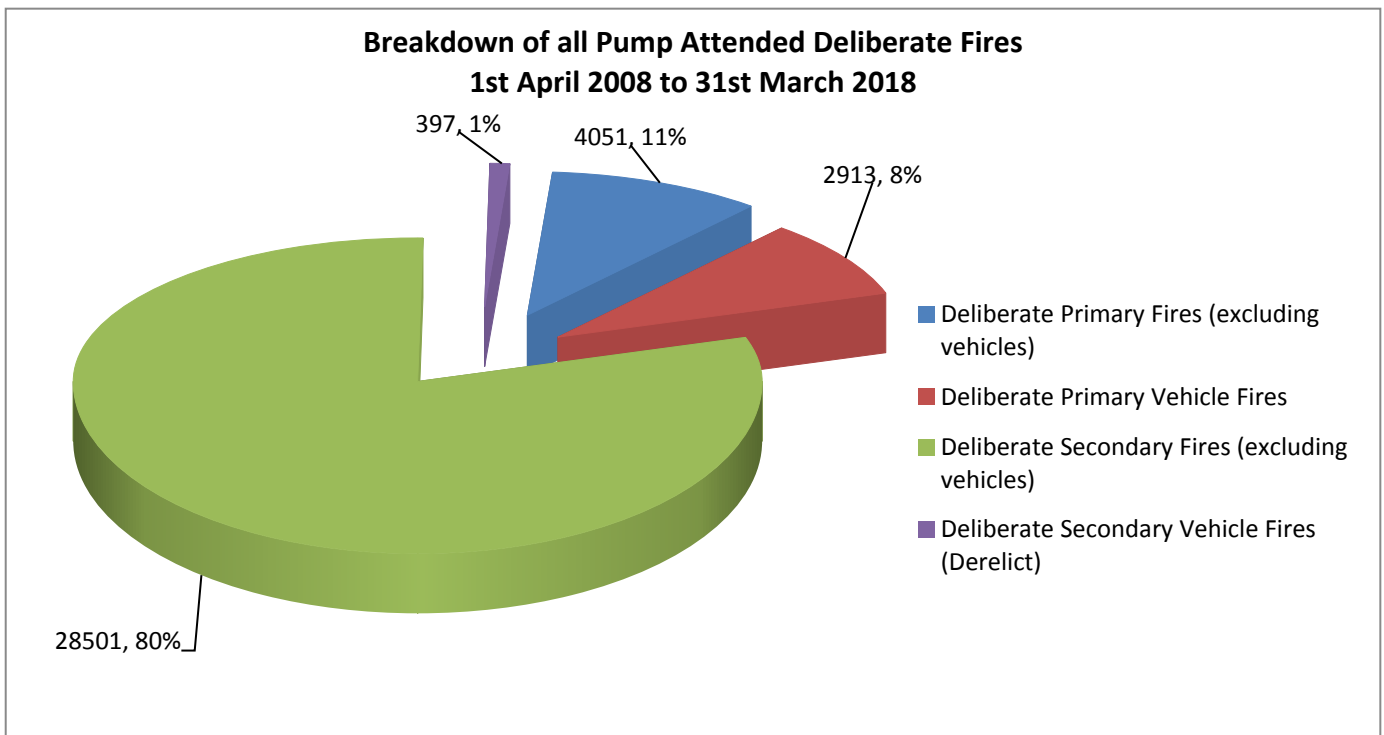
The following chart shows a breakdown of all incidents attended by LFRS over a 10 year period from 2008 to 2018¹⁵.



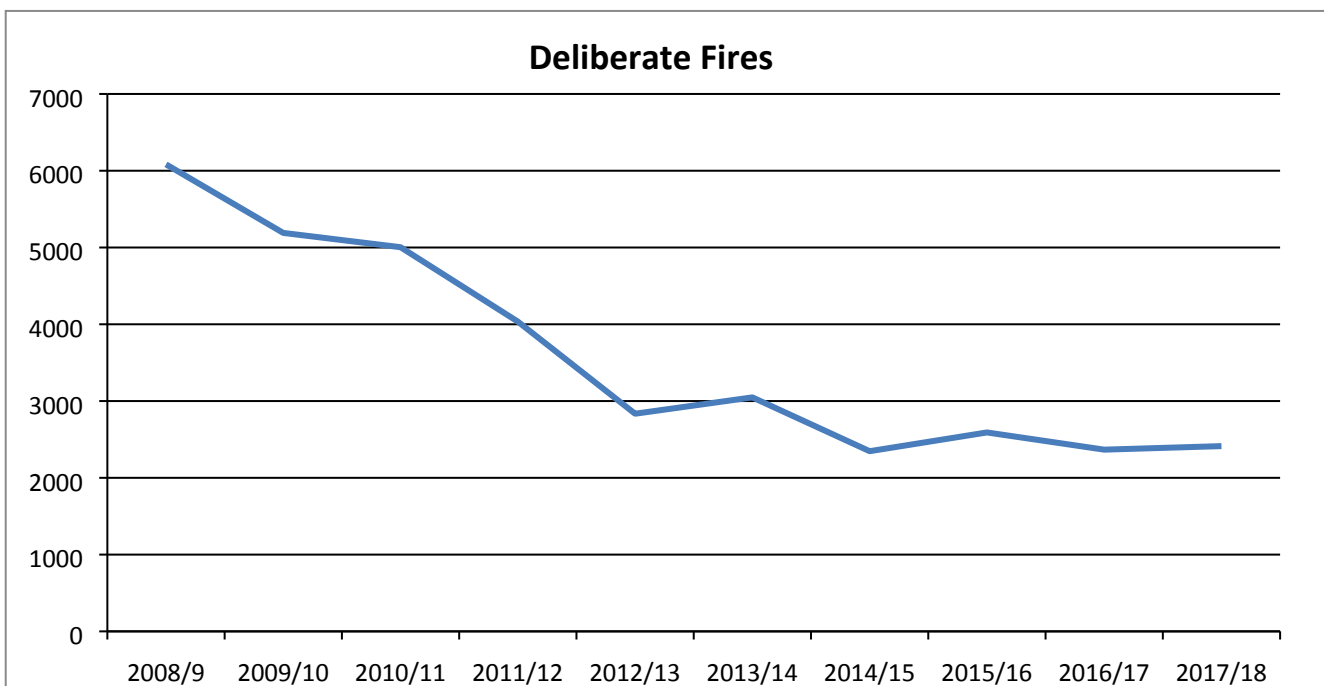
This highlights that over a ten year period 22% of all incidents that LFRS attended were deliberate fires.

The next chart looks at deliberate fires broken down in further detail. It shows that 81% of the deliberate fires that LFRS have attended over the last 10 years were secondary fires and that out of the 6964 deliberate primary fires that were attended, 42% of these were deliberate vehicle fires.

¹⁵ Pump attended incidents with a 'cause' recorded



The following graph highlights that over the last 10 years deliberate fire setting has seen a reduction of 60%; whilst LFRS cannot attribute specific activities to this reduction it is to be recognised that the innovative prevention activities the Service has undertaken has aided in this decline.



Response:

By understanding the impact that deliberate fires can have on the communities of Lancashire,

LFRS has developed a comprehensive range of prevention, protection and response activities. This approach holds a strong emphasis to work towards the reduction of deliberate fires occurring in the first instance with an additional aim to reduce the impact of consequences when a deliberate fire does occur.

By considering the individual circumstances behind each incident that our crews attend, officers are able to determine the cause of a fire and if it has been started deliberately. This approach ensures that any possible crime scene is secured at the earliest opportunity so that our Incident Intelligence Officers (IIO's) are able to commence with systematic investigative work. By using an assortment of techniques our IIOs can identify from the fire remains information to reconstruct the sequence of events leading up to the fire which is then used to identify if a crime has been committed. This ensures that the Police can be provided with expert evidence which can later be used in court.

Education also plays a key part in the reduction of deliberate fires. Our aim is to inspire and positively influence children and young people by embedding behaviours that they will draw upon over their lifetime. By working with children and young people and using a multi layered approach our education packages aim to prevent the type of behaviour that leads to fire setting, one such package is the Childsafe fire safety education session which is delivered in two stages to year 2 and year 6 primary school children. These interactive sessions are delivered by both operational crews and our community safety officers to children in schools pan Lancashire. The sessions are delivered to raise awareness of the risks, understand the consequences and to assist children in making safe choices to protect themselves, their friends and families from fire.

Additional education tools include our Fire Intervention Response Education Scheme (FIRES). This is a package that has been developed to educate children and young people who have developed a fascination with fire related behaviour. This session is usually delivered in the individual's home, or at school on a one-to-one basis, with key adults in the child's life present as appropriate. For secondary school children 'The heat of the moment' package has been designed to encourage children to understand the risks and potential consequences associated with making hoax calls and deliberate fire setting. This package is delivered to secondary schools on demand or where a need has been identified.

For adult fire setters the Service has developed a resource pack in conjunction with our partners in Criminal Justice and the Health Service. The adult fire setters intervention package is a resource that can be tailored to the individuals needs and aims to increase awareness of the dangers and consequences of fire as well as well as providing basic fire safety education with a view to reduce harm from a deliberate fire.

Whilst education is important it is not the only tool that LFRS use to combat deliberate fires, by working in close partnership with the Police, the Local Authorities and many other key partners the Service has in place an abundance of deliberate fire reduction activities. These range from the Arson Threat Home Fire Safety Check (ATHFSC) which is a specialist service in place for individuals at high risk of an arson attack, to meetings such as the Service Intelligence and Analysis Group (SIAG) where incident related intelligence is shared and analysed to influence and inform future risk reduction work.

3.4.False alarms

LFRS receive fire calls through two main sources; the 999 system where calls are made manually to our Control facility (North West Fire Control – NWFC) and Alarm Receiving Centres (ARCs) where activation signals are sent to a monitoring centre and where necessary called through to our Control Centre.

As the majority of the calls received by LFRS to fire alarm systems are through ARCs the Service has procedures in place to mitigate the possibility of attending a false alarm. By working with the businesses of Lancashire most ARC's now utilise a 'Call Back' process whereby on receipt of an activation signal from a monitored premises, they will 'Call Back' the property and enquire as to whether they can confirm a fire or signs of fire. If signs of fire are subsequently discovered they will be asked to ring 999 immediately; if the ARC doesn't get a response when they call back the premises, the call will be put through to NWFC and we will mobilise an appliance under blue lights to the incident.

Call challenge is another procedure used by NWFC so that when a call is received via the 999 system from a commercial premise where a fire alarm is sounding, Control staff will ask the caller whether or not they have a fire or any signs of fire. If there are no signs of fire they will be asked to investigate the cause of the activation; if at any time signs of fire become apparent, they will be advised to call us back immediately at which time an appliance will be mobilised.

Response:

Through the introduction of call challenge and working closely with ARCs, over the last 10 years LFRS has significantly reduced the number of false alarms attended. We have gone from attending over 6,000 in 2008/9 to approximately 4,400 in 2017/18. This is a considerable impact which allows us to better use our resources where they are needed at real emergencies, carrying out community safety activities and gathering risk information to keep crews safe.

Hoax and malicious calls can also have a significant impact on resources; to mitigate this risk our Control Operators are trained to use their professional judgement combined with a defined set of questions and statements if they suspect the call is not genuine.

Education plays a key part in the reduction of hoax calls and this is covered in the education sessions that are undertaken with school children so they are aware of the consequences that making a hoax call may generate. Furthermore technology has provided a successful reduction in hoax calls as it is now easier than ever to record and locate from where the calls have originated.

3.5.Road Traffic Collisions

In the Lancashire-14 area, the police dealt with 22,868 road traffic collisions during 2016 (most up to date information on Lancashire Insight).

There were a total of 3,940 casualties in the Lancashire-12 area, plus 552 in Blackburn with

Darwen and 563 in Blackpool, giving a total in Lancashire-14 of 5,055.

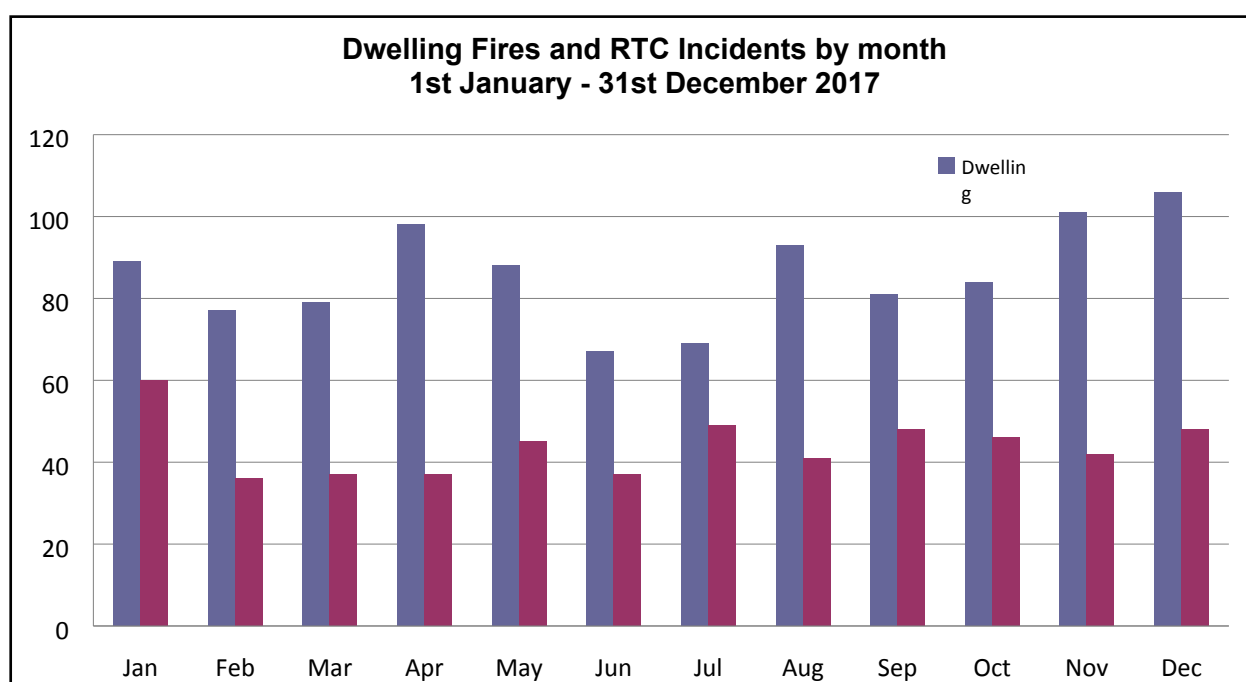
Regrettably, 45 people were killed and 614 people were seriously injured on the Lancashire-12 area roads during 2016. In the wider Lancashire-14 area 815 people were killed or seriously injured, which includes 71 in Blackburn with Darwen and 85 in Blackpool. In total 49 people were killed in the Lancashire-14 area.

Lancaster district saw the largest number (94) of killed or seriously injured casualties in 2016, followed some way behind by Preston (85). In terms of rates per thousand population, Ribble Valley was the highest (0.68), followed by Lancaster (0.65). West Lancashire had the lowest rate (0.45) followed by Wyre (0.47).

The number of people killed or seriously injured in road traffic collisions in Lancashire-14 decreased slightly in 2016, mirroring the longer-term regional and national trend of decline. There was an 18.5% decrease in people killed or seriously injured since 2007 in the Lancashire-14 area, as it dropped from 1,000 in 2007 to 815 in 2016.¹⁶

Lancashire Fire and Rescue Service has a statutory duty to provide emergency response to RTCs. Whilst we are not the lead agency for road safety prevention work (this falls to Lancashire County Council and Unitary Authorities), we do recognise the importance of road safety prevention work in mitigating collisions and the devastating effects that road traffic collisions can have on individuals and communities.

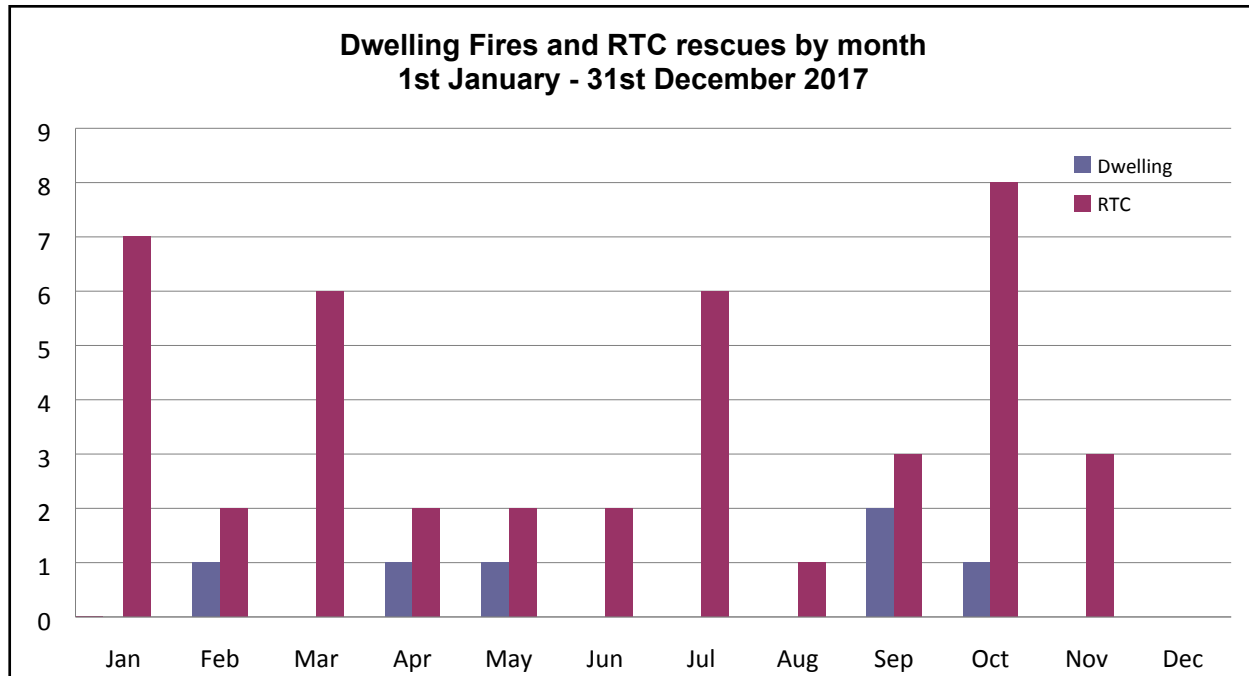
The following graph highlights the number of Dwelling Fires and RTCs attended by LFRS on a month by month basis during 2017.¹⁷



¹⁶ <https://www.lancashire.gov.uk/lancashire-insight/community-safety/road-collisions/>

¹⁷ Incident Recording System

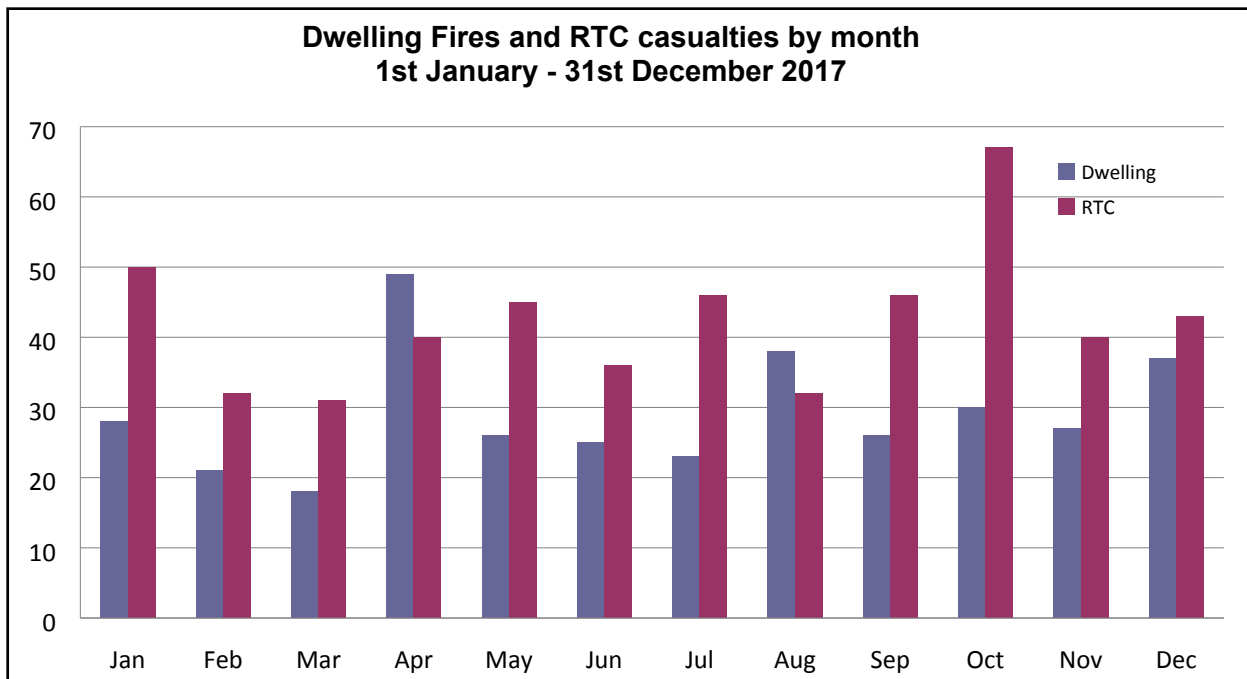
The next graph emphasises the number of rescues that were required across the same period for the same incident types. It shows that in 2017, on average, an individual would be more likely to have been rescued, without injury, from a road traffic accident than a fire in the home.¹⁸



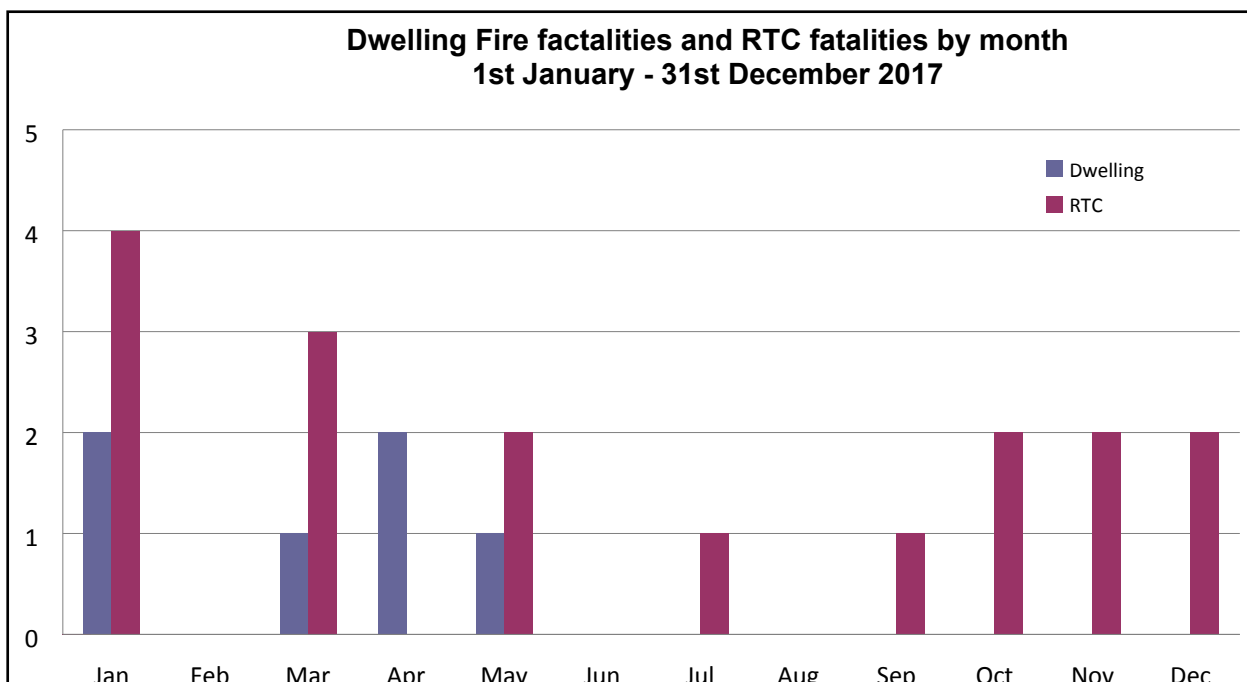
Further analysis of the statistics is highlighted in the following graph showing the number of casualties across both types of incidents, highlighting that an individual is more likely to be killed or seriously injured in a road traffic accident than in a fire at home.¹⁹

¹⁸ Incident Recording System

¹⁹ Incident Recording System



The final graph shows the comparison between fire related fatalities & RTCs in 2017 (attended by LFRS); this information highlights the need for the critical prevention work that we undertake within the Service and with our partners to support road safety education and initiatives.²⁰



Response:

By understanding the impact of RTCs in terms of operational response; recognising that our crews frequently have to deal with the consequences of serious RTCs, LFRS has developed a multitude of preventative education packages that seek to provide a fundamental pathway to reduce the number of people killed or seriously injured on the roads of Lancashire.

²⁰ Incident Recording System

LFRS is an active member of Lancashire Road Safety Partnership and by working in close partnership with Lancashire Constabulary, Lancashire County Council, Blackburn with Darwen Council, Blackpool Council and Highways England the Service undertakes widespread road safety initiatives and activities aimed at tackling road user's perceptions, behaviours and attitudes.

Road Sense is a new education package that has been rolled out pan Lancashire to all year six pupils in primary schools. This package focuses on in-car safety, pedestrian safety and cycle safety and aims to reduce the number of road traffic incidents involving young children.

In September 2017 Road Sense delivery became mandatory and in the financial year 2017-2018 LFRS delivered Road Sense to 7148 pupils in year 6 classrooms throughout Lancashire, Blackpool and Blackburn with Darwen. This figure should increase in 2018-2019 due to Road Sense replacing the fire safety session's currently delivered in all primary schools pan Lancashire.

In addition to this, the award winning Wasted Lives Programme introduced in 2010 is delivered by a team of facilitators and fire officers. The programme targets young drivers and their passengers in the age bracket of 15-25 years old and has to date been delivered to over 100,000 young people throughout Lancashire. The programme offers sessions that cover speed, seatbelts, mobile phones, drink and drug driving. The sessions are highly interactive and offer students opportunity for discussion and reflection. The sessions challenge beliefs which results in safer attitudes towards risk taking behaviours on the roads.

A further initiative, aimed at changing the attitudes and behaviours of 16-25 year old road users, is the Safe Drive, Stay Alive package. This stage presentation is a hard hitting emotive road safety package featuring a mixture of film clips and real life experiences from a variety of speakers including a paramedic, a firefighter and a road policing family liaison officer. The initiative is supported by families who have had first-hand experience of the tragic consequences of bereavement due to a RTC. Audiences experience the real life, stories and experiences of individuals affected; with the production seeking to jolt people into considering the full facts and potential consequences of careless driving.

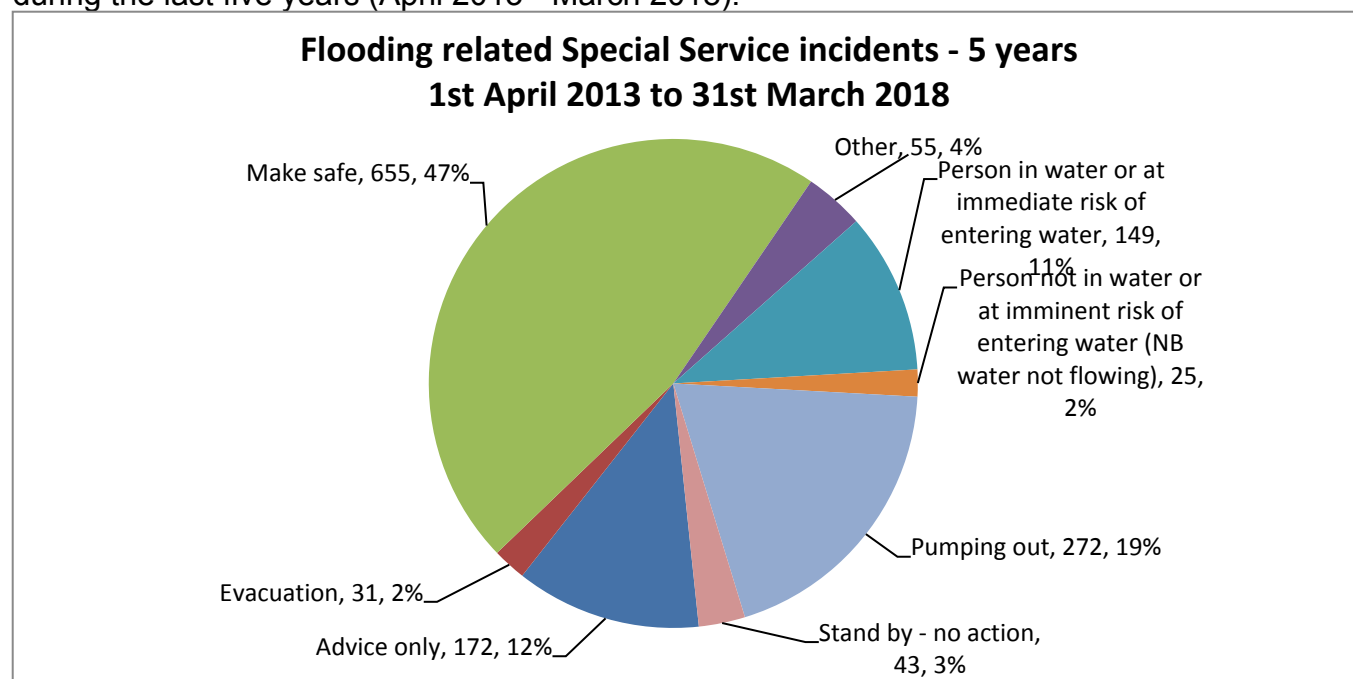
3.6.Flooding

Whilst Lancashire Fire and Rescue Service has no statutory duty to provide emergency response to water or flooding events, as a category 1 responder the Service is bound by the Civil Contingencies Act 2004 to have plans in place to respond to all emergencies. Through close consultation and collaboration with our partners and the Lancashire Resilience Forum (LRF) a Multi-Agency Flood Plan (MAFP) has been developed which outlines the agreed coordinated multi agency response should a flooding event occur in the Lancashire area. This plan has been identified as an essential requirement as it has been recognised through the LRF Community Risk Register that there are approximately 65,000 properties at high or very high risk from flooding within Lancashire.

Due to the diverse nature of the Lancashire landscape our communities can be at risk from coastal / tidal flooding, river flooding (fluvial), surface water (pluvial) and reservoir flooding albeit the likelihood of these events occurring varies from 1 in 5 years to 1 in 1000 years. In the last five

years up to March 2018, LFRS has responded to over 1,400 flooding related incidents ranging from pumping out operations to water rescues.

The chart below highlights the number and type of incidents that LFRS crews have attended during the last five years (April 2013 - March 2018).²¹



December 2015 provided record breaking unseasonably mild, wet and windy conditions that included storms Desmond, Eva and Frank. During December the UK mean temperature was 4.1°C above the 1981-2010 long term average and was 1.0°C higher than the previously recorded warmest December. The month saw 182% of average rainfall making it the wettest December and calendar month recorded in the UK series; rainfall levels reached 2 to 4 times the average in the west and north of the country whilst other parts of the country were less affected²².



²¹ Incident Recording System

²² www.metoffice.gov.uk

During the early hours of 5th December 2015 flooding hit Lancashire hard. During the course of the weekend North West Fire Control (NWFC) took over 3,200 emergency calls, the bulk of which related to flooding incidents in Lancashire and Cumbria, as heavy and protracted rainfall hit the Northwest.

Unfortunately, this was not an isolated event; thereafter the River Lune in Lancaster burst its banks flooding the city centre and an electrical sub-station serving 55,000 homes. Severe flooding also occurred across the county at locations including Whalley, Ribchester, St Michaels, Croston, Burnley and Padiham.

When flooding or severe weather conditions are predicted the Met Office provides Lancashire Resilience members with detailed briefings. These warnings fall into two categories; by time of onset and by likelihood and impact. This aims to provide an advance warning of the possible circumstances. Flood warnings are also issued by the environment agency and include areas that are predicted to flood so that resources can be allocated based on the likelihood and timing of the flood threat within a specific community or catchment area.

Response:

For major flooding incidents a flood rescue command and coordination structure has been developed to ensure priorities are established, a strategy is in place and resources are correctly allocated dependent on the scale or nature of the incident.

LFRS have officers who have been trained to the DEFRA Module 5 (Water Incident Management) Standard, giving them expertise to work in flood waters or at strategic or tactical command level. By allocating different levels of command to an incident the Service ensures that any multi agency response that is required is fully co-ordinated and resourced. This is in addition to 2 rescue boats located at Penwortham Fire Station and Preston Fire Station which is fully equipped to DEFRA standards. To operate this, the Service has in place over 30 Rescue Boat Operators who have undertaken comprehensive training for both internal and out of county deployments.

Furthermore, at an operational level the Service has in place various resources for dealing with major flood events including specialist kit, High Volume Pumps, Water Rescue Teams, Urban Search and Rescue Teams and an assortment of associated equipment; and following the December floods and subsequent debriefs, the Service has now developed an action plan that aims to improve capabilities at flooding incidents even further.

As a result of Storm Desmond and Eva debriefs, every member of operational staff have been issued a flood suit and appropriate training in relation to accessing flood water and safely negotiating hidden dangers. Work is currently ongoing within the Response and Emergency Planning section, in order to identify pre-incident plans for rapid catchment areas.

4. Infrastructure Risk

4.1. Road Networks

The road network covering the 14 authority districts of Lancashire as a whole, hosts over 108.9 miles of motorway. This infrastructure includes the M6, M55, M58, M61 and M65 which provides the county with access to a rapid road network across the region and beyond. In addition to this Lancashire's broader road network is further made up with 'A' roads and minor roads which traverse the county covering over 4,900 miles.

4.2. Rail & Tram Networks

There are currently 62 railway stations operating over 200 miles of track in Lancashire. These range from busy commuter stations such as Preston and Lancaster situated on the West Coast Mainline, to smaller stations (some unmanned) located in rural areas. Lancashire is also part host to a heritage rail line, the East Lancashire Railway, which runs from Rawtenstall on a 12 mile stretch to Heywood in Greater Manchester.

Work is currently underway to electrify more rail routes across the North West of England; this will include the 25 mile route between Manchester and Euxton in Lancashire and the 17 mile route between Blackpool North and Preston allowing a number of services to be operated by quicker, more reliable electric trains.

In addition to the rail network, Lancashire has an 11 mile tram system that operates from Starr Gate in Blackpool to Fleetwood in the Wyre district. Part of this network is a 'shared space zone'; this is a new urban design approach reducing demarcation between trams, vehicles and pedestrians, with some kerbs and traffic signs removed to produce a more open space.

Statistics show that the number of incidents rail and tram related incidents LFRS has attended remains low, 117 incidents in total over the last 5 years.²³ However, if a large scale incident was to occur, the Service has to ensure operational preparedness to deal with such an incident. Incidents involving the rail or tram network may include embankment fires, rescues from derailments and collisions, hazardous materials, high voltage power supplies, electrocution, incidents in tunnels and suicides so the Service has in place an appropriate balance of guidance and resources to support and inform the decision making process at such an incident.

Response:

Site specific risk information is gathered for all railway stations and tunnels across the county to ensure that crews have operational plans containing detailed risk information should an incident occur. In addition to this, training is undertaken and has included multi-agency exercises to give our crews and partners the opportunity to train together. Exercise Mallard was such an example

²³ Incident Recording System

which included participants from over a dozen responding agencies. The exercise presented those participants with the scenario of a train having hit a double-decker bus on a level crossing, resulting in multiple fatalities and injured. This exercise offered a difficult but realistic scenario and a subsequent painstaking operation which was carried out by the teams assigned to the work.

Additionally, the Service has entered into a unique partnership with Blackpool Transport so that fire engines at South Shore and Bispham now carry 50 tonne hydraulic jacks together with other complex lifting equipment. This equipment is designed to lift the new Bombardier tram should an incident occur involving a member of the public becoming trapped beneath it.

4.3. Ports & Maritime

Lancashire has three ports, situated in Heysham, Fleetwood and Glasson Dock. There are also a number of other maritime related sites which service leisure craft such as Preston Docks which was once Europe's largest single dock basin.

The largest port is Heysham which is a deep berth port capable of handling some of the world's largest vessels. It is served by a railway station and the recently constructed £140m M6 Bay Gateway link road. The port is a key gateway for Irish Sea trade and is attracting significant investment including a recent £10m improvement programme. Its proximity to gas fields and the world's largest offshore wind farm (Walney Extension) has also influenced the type of goods being handled & services offered.

Lancashire's two other ports are Glasson Dock (Lancaster) which is a small port situated on the mouth of the River Lune handling ships of up to 3,000 tonnes and Fleetwood Port which has suffered a significant decline in commercial operations.

Whilst LFRS does not have the capability or resource for firefighting at sea, the Service attends incidents on ships or vessels which are 'moored alongside' or within a dock. A ship fire poses significant risks to firefighters beyond those experienced during building fires. This includes complex layouts, confined spaces, metal construction, excessive heat layers, hazardous cargo, 360-degree fire spread, restricted access & egress and the stability of the ship when using water to fight fires. Any response is therefore complex and resource intensive.

Marine incidents are also usually reported to Her Majesty's Coast Guard (HMCG) as an incident at a port also poses the risk of a vessel sinking or leaking its cargo. HMCG will then decide upon the relevant course of action and alert the appropriate agency ('s) as required.

Response:

To deal with high risk areas such as ports, it is important that LFRS crews undertake familiarisation sessions and training; this gives crews the opportunity to consider how they might deal with an incident if it were to occur. Site Specific Risk Information is gathered from these sites and to complement this, individual ships are required to carry plans which should be available in the event of fire. In addition, a number of LFRS officers have attended ship alongside training at Heysham Harbour.

5. Industry Risk

The history of Lancashire is steeped in a varied assortment of industries; from the boom of the textile industry and cotton manufacturing which saw the birthplace of the industrial revolution, to coal mining and fishing, the county's industrial heritage is rich.

Whilst much has changed with many of the traditional cotton mills and coal mines no longer operating the county is still home to a vast variety of industries including manufacturing, aerospace, agriculture and a thriving tourism industry.

As the county is home to such diversity, the risk for LFRS is varied, meaning that the Service has to have in place a multitude of resources to enable our crews to respond to any eventuality. The county has many older buildings that were historically used as mills or for manufacturing purposes and whilst some have been converted and will have had fire safety measures incorporated, others have sadly fallen into disrepair. Older buildings were not subject to the stringent fire safety regulations that apply today meaning that fire separation and other safety measures are not necessarily in place. This may not pose so much of a risk to those who use the building on a day to day basis but should a fire occur, an older building may present a greater fire risk due to the way the building was constructed.

Response:

To mitigate these risks, operational crews will gather Site Specific Risk Information, often working in partnership with Fire Safety Inspectors to advise business owners on the appropriate fire safety measures that need to be undertaken to ensure that the building is made as safe as possible. If a building is derelict and is deemed to be identified at risk from antisocial behaviour, a multi-agency approach is often used to ensure that the building is made as secure as possible to try to prevent arson or deliberate fires.

5.1.BAE Systems

BAE Systems has 2 sites in Lancashire, to the East and West of Preston, at Salmesbury & Warton, collectively known as The Warton Unit. Together these sites comprise 147 hectares and employ over 20,000 people making BAE Systems a major employer within the county.

Both sites are enterprise zones established by the Government as part of the long term economic plan to deliver sustainable growth based on cutting-edge technology and enterprise and boast an array of advanced engineering and manufacturing businesses including the single largest concentration of aerospace activity in the UK.

The site at Warton hosts one of the longest runways in the UK at 2400m. Should an incident occur on the airfield our operational procedures are laid out within guidance named "Operation Fire Fox". LFRS participates in an annual test of "Operation Fire Fox" which is carried out by the Civil Aviation Authority to ensure that these operational procedures are fully embedded.

The site at Salmesbury concentrates on manufacturing and also hosts the training academy. Two areas of this site fall under the top tier of the Control of Major Accident Hazards (COMAH) Regulations and therefore there are on-site and off-site plans which are tested annually under an exercise named “Operation Stingray”.

Due to the vast amount of structures that are across both sites, LFRS works closely with BAE Systems to develop and maintain detailed Site Specific Risk Information for each of the buildings. The sites themselves possess many different risks so by breaking down the information into manageable chunks we are able to identify significant hazards as quickly and safely as possible.

5.2.COMAH & REPPiR Sites

All businesses in the UK are required by law to protect their employees, third parties and members of the public who may be affected by their work activities; additionally they must take into consideration the many legal requirements that are in place to protect the environment. Sites that store or use dangerous substances must have in place further processes to meet the regulations that aim to prevent or limit the consequence to people and the environment should an incident occur. Lancashire is home to 11 of these sites which fall into the following categories,

- COMAH (The Control Of Major Accident Hazards)
- REPPiR (Radiation, Emergency Preparedness and Public Information Regulations)

Nine of these sites are upper tier COMAH sites, one is a REPPiR site and one site is both COMAH & REPPiR.

COMAH aims to prevent and mitigate the effects of major accidents involving dangerous substances which can cause serious damage/harm to people and/or the environment. COMAH treats risks to the environment as seriously as those to people. These regulations operate on two levels dependent on the amount and type of hazardous substances that are stored or used by the organisation. Sites that store or use more than the lower threshold of a hazardous substance are classed lower tier establishments, with sites that store or use more than the higher threshold being classed as “upper tier” COMAH sites.

The Upper Tier COMAH Sites within Lancashire are:

BAE Systems, Salmesbury	Redcliffe International (Shipping) Ltd
Baxenden Chemicals	Tradebe Solvent Recycling Ltd
Johnson Matthey	Vinnolit Hillhouse UK
Procter & Gamble	William Blythe Ltd
Evans Vanodine	

These sites are required to document safety reports and produce major accident prevention policies (MAPP) in line with their tier grading that detail and demonstrate the full safety measures

they have in place to minimise the risks posed by the substances' stored on their site, whilst taking into account the local communities and environment. They are also required to notify the competent authorities such as the Health & Safety Executive and Environment Agency so that inspection programmes can be planned to ensure that they comply with their duties as defined within the regulations.

In addition to these regulations, off site plans are produced and developed by the Lancashire Resilience Forum (LRF) of which LFRS is an active partner. By working in close collaboration with various partners through this forum a multi-agency approach is afforded to produce contingency plans should an incident occur. Furthermore, for each of these sites LFRS crews gather detailed Site Specific Risk Information (SSRI) so that the necessary information is available immediately to our staff should an incident occur.

REPPIR regulations are in place so that a framework of emergency preparedness measures are ready to protect and inform the public following an incident. Again as with COMAH, all sites must also have off-site emergency plans and our crews also collate SSRI plans which are produced to ensure that all possible risk information is documented.

The REPPIR sites within Lancashire are:

- Heysham EDF Power Stations 1&2 (which is the only site within the UK to have two operating nuclear reactors)
- Springfields Fuels Ltd

Springfields Fuels Ltd is both REPPIR and COMAH and manufactures fuel for a variety of nuclear reactor designs worldwide.

Furthermore, to ensure the plans are sufficient and that our crews and our partners are trained in operational preparedness should an incident occur, exercise and training sessions are regularly undertaken. Within the last year our crews have undertaken numerous exercises across a variety of sites including a multi-agency exercise involving a Radiological incident at Springfields to test the company's off-site emergency plan. This exercise involved LFRS, Lancashire Constabulary, North West Ambulance Service, Environment Agency, Public Health England and NHS England to name a few and gave all agencies an excellent opportunity to have a realistic training exercised and pushed to their limits. The exercise was observed by the ONR (Office for Nuclear Regulation). As with all exercises this was fully debriefed so that any learning outcomes could be introduced within the sites plans.

5.3. Waste, Recycling and Scrap Sites

Lancashire is home to a vast range of waste, recycling and scrap metal sites so that people can dispose of their unwanted items. These sites not only process conventional house hold waste including, paper, cardboard, plastic and wood but also deal with a variety of waste that is considered hazardous such as asbestos, chemicals, batteries, solvents and oils. Waste sites can range from landfill which typically deals with household refuse, to scrap metal recycling centres

that specialise in scrap metal processing and recycling. Not all waste sites are set in the open, many private waste processing and recycling plants operate within extremely large open plan steel framed buildings, whilst some sites store different waste in large containers that are then transported to other locations for processing.

UK Fire and Rescue Services attend a significant amount of fires at waste sites each year. These fires are often difficult to extinguish, needing lots of resources for long periods of time. When they occur, waste site fires can have serious effects on public health, the environment, safety to firefighters and the local community due to the nature of the fuel that is burning.

In 2014 new guidance was issued for waste and recycling sites by the Waste Industry Safety and Health (WISH) forum. This guidance was developed with input at the time from the Chief Fire Officers Association (CFOA), the Environment Agency (EA) and other bodies with an aim to provide structured advice and standards for this sector on good and acceptable practice to enable them to reduce the risk of fire within their sites.

Response:

To ensure that operational crews have detailed guidance for each different site, Site Specific Risk Information is gathered detailing the variety of risks unique to each individual location. Training is also undertaken to ensure familiarisation so that our crews are trained in operational preparedness should an incident occur. Furthermore, the Service has entered into a formal collaboration with the Environment Agency to produce Instant Access Plans for those sites deemed to be the highest risks. By working together to produce such plans guidance is in place so that high risk areas are identified and plans are established prior to any incidents occurring.

In December 2016 the Service procured a new appliance called the 'Stinger'. This appliance is in addition to our Aerial Ladder Platforms and is equipped with a boom-mounted piercing tool capable of penetrating buildings, windows and containers. The on-board pump can then deliver 1000 litres of water per minute through the holes at the tip of the tool, or the tool can be retracted and up to 5500 litres of water per minute can be delivered via the hose without having to commit personnel. This appliance has allowed crews to extinguish fires in a more efficient manner and has proven invaluable at numerous waste site fires where access has been poor and hazards such as gas cylinders and unstable surfaces are present.

In 2019 we will be receiving our second Stinger which will further improve our Water Tower and Ariel capabilities. This vehicle is going to be situated in the Southern part of the county in Skelmersdale. The area contains many industrial estates therefore as a Service we believe that having a Stinger here reduces the risk of fires spreading, which should reduce the impact on local businesses and the number of claims being made through insurance companies.



5.4. Heritage

The building heritage that spans Lancashire is rich, including several stately homes, the grand castles of Lancaster and Clitheroe and the famous Blackpool Tower. Within the UK there are three categories of listed buildings;

Grade I buildings are of exceptional interest, nationally only 2.5% of listed buildings are Grade I

Grade II* buildings are particularly important buildings of more than special interest; nationally 5.5% of listed buildings are Grade II*

Grade II buildings are of special interest; 92% of all listed buildings in the UK are in this class and it is the most likely grade of listing for a home owner.

Lancashire is home to over 73 Grade I listed properties that are classed as of exceptional interest. Furthermore, the county hosts over 255 properties listed as Grade II*²⁴ and over 4900 amount listed as Grade II. This remarkable variety reveals the abundance of the county's history and contributes to the identity, vitality and economic life within Lancashire. The county's heritage sites are enjoyed by the tourists that visit Lancashire in their thousands on an annual basis and by the county's residents alike.

While modern buildings are designed from the outset to accommodate meticulous fire safety regulations, many historic buildings were built within an era when fire safety was not a significant requirement. The very character of some of the county's heritage properties means that fire is without doubt the greatest threat to the building; this is due to the fact that a fire is not only able to destroy the entire fabric of a building but also its precious artefacts.

Response:

The Service recognises the importance of the county's heritage and the associated risks and challenges that listed buildings can present; with this in mind the Service has a dedicated Heritage Liaison Officer (HLO) in post. The HLO maintains close links with agencies and authorities with an interest in Heritage, such as Historic England, Lancashire County Council and Local Authorities

²⁴ <https://historicengland.org.uk/>

and also attends regular meetings with both the Northwest Heritage Fire Protection Group and the Lancashire Conservation Officers Group. By working closely with our partners LFRS has developed robust information sharing arrangements to ensure risk reduction advice is provided with an aim to reduce the risk of a fire occurring and reduce the impact if one does.

Our Fire Safety Inspection (FSI) officers undertake fire safety audits of some Grade I and Grade II* heritage premises to ensure that adequate fire safety solutions are in place and that the building meets life safety standards. By consulting with the Service HLO, our FSI officers are able to determine how to best achieve fire safety regulation requirements that also reflect the balance against the heritage asset.

Should an incident occur at a heritage site our operational crews work in close partnership with FSI officers to gather Site Specific Risk Information. Heritage sites can often house unusual features that may subsequently influence the operational plans so by working together further risk is identifiable. In addition to this, 'Salvage Plans' are frequently created so that key information surrounding the sites significant assets is available.

5.5. Piers

Pleasure Piers were first built during the early 19th century when seaside holidays in the UK became more and more popular. Lancashire with its wide expanse of sandy coastline has been home to a total of eight piers with the first being built at Blackpool north in 1863. Sadly due to the decline in popularity of UK holidays, four of the piers have since been demolished. To date Lancashire has three piers (North Pier gaining Grade 2 status as defined by Historic England) remaining in Blackpool and one at the neighbouring seaside town of St Anne's; all of which host an array of attractions, amusements, restaurants, festivals and shops. The piers regularly attract tourists from within Lancashire but visitors are also attracted on a National and International scale looking for entertainment and the opportunity for a seaside stroll.

The generic structure of the piers themselves means they are vulnerable to exposure from disasters such as fire, storms, boating accidents and modern day terrorism threats. The consequences of an emergency on a pier could result in serious damage leading to partial collapse, severance from land, or to the loss of a historical heritage structure which could potentially have a significant impact on local businesses and tourism.

Response:

To help mitigate these risks each of the piers has had a Site Specific Risk Information assessment carried out by trained operational fire crews, with additional protection advice provided from Fire Safety Inspectors, to ensure that adequate fire safety solutions and adequate risk assessments are in place. In addition the Service is an active member of the Lancashire Resilience Forum which has enabled the development of a multi-agency emergency plan that sets out the procedures to manage and mitigate the impact of an incident involving a pier in Lancashire.

5.6. Lancaster University

Lancaster University 2020 Strategy, maps out an ambitious future, as a “globally significant “university in the top 10 in the UK and the top 100 in the world. In order to achieve this and accommodate a corresponding increase in student and staff numbers in the next ten years investment in its core campus and the development of adjacent university land is continuing year on year. Within this next critical stage of development, the University could reach a total student population of 17,000 at the Bailrigg campus by 2025 and resourcing this growth will require significant adaptation and expansion of most existing academic departments within the campus and also the creation of new.

The Health Innovation Campus (HIC), funded by the University and through the Lancashire Enterprise Partnership’s Growth Deal Fund and the European Regional Development Fund (ERDF), will be focused on tackling the biggest challenge in healthcare. Construction of the £41 million first phase of the building, adjacent to the University’s campus, has started on site with completion in 2019. The HIC will create new jobs by supporting 300 Lancashire-based small and medium enterprises to develop new and innovative digital and technological solutions and will have wider impact by engaging regionally, nationally and internationally with hundreds of companies. Innovations will be targeted around the prevention and early diagnosis of illness and access to care. As well as digital innovation, this will include the design, development and evaluation of healthy places to live and work, improving quality and value in health innovation systems, and the development of new materials to improve health.

The LEP is also supporting the new 3,500 home Garden Village situated south of the city, one of the first of its kind in the UK, to be brought forward, further showcasing collaborative working between the LEP, the University and the City Council to regenerate and enhance its city offer. The campus will work by co-locating academics from a broad range of different backgrounds in a new building alongside businesses and other partners. The building will also provide a new home for the University’s expanding work in in health and medicine.

Extensive large new student accommodation is being built within Lancaster city centre to cope with the increase demand of more students attending the university but also part of the ten year investment of their strategy plan for 2025.

The Lancaster Environment Centre (LEC) atrium is undergoing a major refurbishment to upgrade the area to reflect the department's reputation as one of the world's largest and highest rated multi-disciplinary centres of environmental research.

6. Tourism

6.1. Tourism in Lancashire

In addition to the workday population of Lancashire, tourism also generates large surges in visitor numbers on a seasonal basis. The latest official visitor figures stand at 67.28 million per annum, an increase of 4.5% from the previous year. Visitor numbers to Lancashire have increased for the 6th consecutive year. The economic impact generated by these visitors is valued at £4.13 billion, an increase of 5.3% year on year from £3.92 billion.²⁵

6.2. Blackpool Pleasure Beach

Founded in 1896 over a forty-two-acre site on South Promenade (Ocean Boulevard) in Blackpool, it is one of the most visited tourist attractions in both Lancashire and the United Kingdom and is home to numerous rides and attractions. Incidents at any attraction that sees large numbers of the public attending for entertainment purposes pose a variety of hazards and risks. To mitigate this, the Service has in place an abundance of operational guidance to support and inform the decision making process should an incident occur, this includes detailed strategic plans that have been developed with our partners which consider all eventualities. Furthermore, Site Specific Risk Information is gathered and training is undertaken to cover a multitude of hazards and risks that may present themselves. In early 2018 a Lancashire Resilience forum multi agency exercise was successfully held to assure that the response plans to Blackpool Pleasure Beach tested. In support of the above exercise, western area staff along with USAR, attended a presentation by Staffordshire FRS, where they covered a case study of the Alton Towers 'Smiler' crash.

6.3. Blackpool Promenade

Otherwise known as the "Golden mile" consists of an open public space promenade with three piers, North pier is a Grade 2 listed building, with Central and South pier used for amusement arcade venues. The promenade sees approx. a million people per summer season (April – September) traveling the length of it, this space is shared with the Blackpool Transport Trams. Blackpool Promenade holds a number of events including 'Live wire' music event and a number of well-known music performers such as Will Smith (2017) and Britney Spears (2018). It also sees the Blackpool Air show, with 70-80,000 people gathering on the promenade to watch the two day show. Blackpool Illuminations is an annual light festival, founded in 1879, held on a 6 mile length of the promenade and is supported by the World Fireworks Championships which a further 20,000 people attend the promenade.

²⁵ <http://www.marketinglancashire.com/news/facts-figures/>

6.4. Football Grounds

Lancashire has three football teams in the top two divisions of the football league. Each week thousands of footballing fans travel to Blackburn, Burnley and Preston to watch their respective football teams.

Club	District	Capacity	Average Attendance
Blackburn Rovers FC	Blackburn with Darwen	31,667	14,178
Burnley FC	Burnley	21,400	20,688
Preston North End FC	Preston	23,400	13,801

Following the major incident at Hillsborough, involving crushing, where 766 were injured with 96 fatalities and the fire at Bradford City, killing 56 and injuring 265, the Taylor Report was produced. This has led to much tighter regulations. Although football grounds are now much safer, the hazards from such large crowded spaces remain.

The local authority is responsible for ensuring that the stadium complies with government guidance and as a result carries out regular inspections of the stadium. The local authority also chairs a Safety Advisory Group, comprising club officials and representatives of the police, fire and ambulance services, which meets on a regular (usually monthly) basis. The Safety Advisory Group can also be recalled at short notice to consider any issue arising from a recent fixture, or any special measures that are proposed for a forthcoming match.

7. Environmental Risk

7.1. Lancashire Coastline and River Network

The Lancashire coastline comprises of 77 miles of varied landscape including seaside towns, agricultural land, the tidal expanse of Morecambe Bay and the major river estuaries of the rivers Lune, Ribble and Wyre. The coastline is home to the popular walking route the 'Lancashire Coast Way' which runs from the village of Silverdale in the north of the county down the Ribble estuary towards the village of Freckleton.

The rivers of Lancashire drain westwards from the Pennine's into the Irish Sea. Tributaries to these rivers are the Calder, Darwen, Douglas, Hodder and Yarrow, with the River Irwell also partly in Lancashire.

Lancashire is also home to an expansive canal network; the Leeds/ Liverpool Canal is the longest canal in Britain at 127 miles and passes through East Lancashire and across the Pennine countryside before heading into Yorkshire. The Lancaster Canal covers a distance of 57 miles, has 8 locks, and runs from Ashton Basin in Preston to Canal Head in Kendal. This canal includes an aqueduct over the River Lune and the Millennium Ribble link which joins the main canal 1.5 miles outside Preston. This new section of canal was opened in 2002 and connects the Lancaster

Canal to the Leeds & Liverpool Canal.

Morecambe bay is the largest expanse of intertidal mudflats and sand in the United Kingdom covering a total area of 120 square miles. The bay is notorious for its quicksand and fast moving tides and is rich with cockle beds which have been fished by locals for generations. The tragic events of the night of the 5th February 2004 saw 23 cockle pickers drown in the bay after being cut off by the tides.

The water risk in Lancashire varies due to the diverse range of water sites that the county is home to. From fast moving coastal tides and quick sands to the still waters of the canals, all pose different risks.

Response:

Due to this great diversity, crews at each station in Lancashire undertake and assess their geographical area so they are able to identify the possible risks and associated hazards. Site Specific Risk Information is also gathered where possible to ensure that crews have the latest risk based information available.

Crews at various locations are trained to use a variety of techniques and regular exercises are undertaken to give the opportunity to consider how they might deal with an incident if it were to occur and to gather further information that may assist.

Furthermore the Service has introduced a variety of educational packages specifically designed to target water safety. Campaigns in previous years have targeted young people with a view to raising awareness of the risks associated with swimming in open water and this year's CFOA campaign looks to raise awareness of the risks associated with being near water. This campaign has been developed as approximately 44% of people who drowned in 2014 had no intention of entering the water.

7.2.Moorland

The landscape of Lancashire is diverse with the county being categorised as one of the most urbanised localities in Britain²⁶. However it is also host to great natural physical diversity boasting extensive areas of countryside and moorland including Areas of Outstanding Natural Beauty (AONB). Large parts of rural Lancashire are categorised as moorland, made up of extensive areas of blanket bog on deep peat soils, purple moor-grass, heather, heath, forestation and many other typical moorland plant species. At lower altitudes the landscape is characterised by pasture and meadows enclosed by dry stone walls. The moors not only provide habitats for many different wildlife populations but are also home to numerous historic landmarks and reservoirs. The moorland in Lancashire has significant economic, historical and environmental significance due to the moorlands various usage including water catchment, grouse shooting, agricultural, recreation and leisure activities. The moorland peat acts as a large carbon sponge removing tonnes of Carbon Dioxide from the atmosphere and holding it in the peat layer, during wildfire the stored

²⁶ <http://www.lancashire.gov.uk/lancashire-insight/environment/environment-overview.aspx>

carbon dioxide is released into the atmosphere and the peat layer can become damaged leading to erosion and vulnerability to other natural hazards such as flooding in lower areas caused by erosion.

The wildfire season, severity and size of wildfires is increasing in duration, this could be attributed to climate change and other factors that have sustained or increased the fuel layer on the moors such as changes in land management, reduced animal grazing and competing priorities for moorland management. It is evident that we are also experiencing more wildfires that meet the UK FRS severe criteria (more than - 1 hectare, 6 hour duration, 4 fire appliances, 1.5m flame length or significant risk) earlier and later in the year, in some instances February.

Wildfires have historically occurred in spring and summer months. The spring fires usually involve surface fine fuel fires such as Molina grass/heather that have been dried out by the wind, sun and frost, all of which limit the amount of moisture to the fine fuel. The fires that occur are also supported by a blanket of dead vegetation on the moors from the previous year. These types of fires can spread rapidly over large geographic areas.

The summer fires are caused by prolonged periods of drought conditions due to low rainfall and high temperatures, these types of fires can involve ground fuels such as peat, surface fuels and ladder fuels such as forestation more easily. Ground fuel fires that occur in large and remote geographic areas where water sources are not readily available can be extremely resource intensive, require support from partner agencies and be difficult to extinguish due to being deep seated below ground as demonstrated by the Winter Hill fire which started in June 2018 and burned for over 40 days. These types of incidents require vast quantities of water far in excess of what conventional fire-fighting appliances can deliver. Forestation fires generate long flame lengths and high intensity fires that predominantly require aerial assets to successfully bring them under control.



Winter Hill, summer 2018

Response:

LFRS has established the multi-agency 'Lancashire Fire Operations Group' to enable partner agencies and interested parties to work together to better manage prevention and response activities in relation to wildfires. Response plans are available electronically on every fire appliance via our vehicle mounted data systems. Furthermore the service has a number of wildfire equipped stations and bespoke vehicles such as the Softrack and Polaris. Training is undertaken regularly so that crews are familiar with the specialist techniques used for tackling wildfires and to enhance safety during wildfire incidents. Contingency plans are also in place, which were recently activated, to supplement LFRS resources with wildfire helicopters and specialist wildfire teams located in other service areas. In the 2019/20 planning year, LFRS aim to deliver a Wildfire Burns Team as an alternative measure to using primarily water for managing the wildfire. Planning work is currently underway for this and other initiatives including the operational delivery of 3 National Wildfire Tactical Advisors based in Lancashire to strengthen wildfire planning and response.

7.3. Reservoirs & Water Storage

There are over 100 registered dams and reservoirs in Lancashire owned by United Utilities and private owners. All reservoirs over 25,000 M³ are subject to safety inspections as required by the Reservoirs Act 1975 and this Act provides the legal framework to ensure the safety of all UK reservoirs above natural ground level. In addition the Environment Agency regulates reservoirs through the Water Act 2004 and the Flood and Water Management Act 2010 is in place to reflect a more risk-based approach to reservoir regulation.

The Civil Contingencies Act (2004) requires Category 1 Responders such as LFRS to have plans in place to respond to all emergencies including flooding. Due to the vast amount of water reservoirs are capable of holding, they have been identified as high risk and so a multi-agency reservoir plan has been developed. This is available to ensure that local responders are able to make a swift and effective multi-agency response to deal with flooding incidents arising from reservoirs.

Response:

In addition to the multi-agency plan, LFRS has resources available to deal with incidents involving reservoirs. For some reservoir sites within Lancashire, Site Specific Risk Information (SSRI) is gathered detailing the individual hazards and location specifics that our crews may need to be aware of should an incident occur. The Service also has operational crews that have had specialist training in swift water rescue operations and a selection of specialist equipment is available from strategic locations across the county.

Response capabilities are not the only activity that the Service uses to address the hazards that reservoirs pose. Education plays a key part in the prevention of water related incidents and the Service has developed a water safety campaign season which is designed specifically to educate and inform young people on the dangers of playing in or near open water. LFRS are currently in partnership with other agencies, in order to provide Water Safety Boards at identified reservoirs

and open water venues.

7.4. Wind Farms

The UK's first commercial wind farm was constructed in 1991, since then this industry has established itself as the UK's largest source of renewable energy generation²⁷. Lancashire currently has 16 onshore windfarms in operation hosting a total of 80 wind turbines. These range from a variety of small developments with only 1 turbine up to larger developments such as Scout Moor which has to date a total of 26 turbines.

The Walney Extension, located in the Irish Sea, is the world's largest operational offshore wind farm, generating clean electricity for nearly 600,000 homes.²⁸

Wind turbines present an assortment of risks; the remote locations of many of the turbines can mean that travel time to the areas can increase the likelihood of fire spread. The height, location and construction of the turbines can make them prone to lightning strikes, and as the turbine-supporting tower structure may be over 100m high, if people are trapped rescue operations may prove to be very difficult.

Response:

Due to the variety of locations that host Lancashire's turbines the Service has an array of mobilising response options including four wheeled drive vehicles, a wildfire unit (either Softrak or Polaris) and the rope rescue unit for complex rescue operations. Furthermore all Fire Stations undertake detailed risk assessments of their geographical areas so that our crews are able to identify and familiarise themselves with any potential risks or hazards present within their station boundary. Crews undertake a detailed on site risk assessment to gather Site Specific Risk Information and training is often undertaken so that crews have the opportunity to consider how they might deal with an incident if it were to occur.

7.5. Solar Energy

Solar Energy is a further source of renewable energy generation within Lancashire. Solar farms are present across the county and many buildings now have panels fitted upon their rooftops. For home owners there are two technologies commonly used:

- Solar Photovoltaics (PV), also known as solar electricity which is a technology that converts sunlight directly into electricity
- Solar Water heating which is a technology that uses sunlight to produce hot water.

All new technologies can introduce new risks, and all new energy-handling systems can introduce new fire risks. However, at the present time there is no reason to believe that the fire risks

²⁷RenewableUK.com

²⁸ <http://www.walneyextension.co.uk>

associated with solar panels are any greater than those associated with other electrical equipment. Nevertheless, these systems are now more common so consequently LFRS operational guidance has been updated to detail the risks that may present themselves such as electrocution, falling panels and the dangers of flying glass

7.6.Fracking

Hydraulic fracturing or 'fracking' is the technique designed to recover gas and oil from shale rock. The process involves drilling down into the earth before a high pressure water mixture (made up of water, sand and chemicals) is directed into the shale rock layer to release the gas/oil for recovery. The term fracking refers to how the shale is fractured apart by the high pressure water and sand mixture.

The oil and gas company Cuadrilla currently has two sites on the Fylde Coast to explore for shale gas by drilling and fracking at Preston New Road and Roseacre. All fracking sites within England must obtain appropriate environmental authorisation or permits from the Environment Agency (EA), who's responsibility it is to regulate and monitor the environmental impacts of shale gas operations.

In addition to this the Health and Safety Executive (HSE) are responsible for the regulation of shale gas operations via the Borehole Site and Operations Regulations 1995. These regulations have a focus on the design, construction, operation, maintenance and ultimately abandonment of the wells. It should be noted that where the Borehole Sites and Operations Regulations 1995 are applicable, the Regulatory Reform (Fire Safety) Order 2005 does not apply.

Response:

From an operational perspective a full detailed risk assessment of the site has been undertaken by LFRS to gather Site Specific Risk Information, this is continually updated as the site develops. Furthermore, the Lancashire Resilience Forum (LRF) of which the Service is a partner, regularly consults with the EA, HSE and relevant partners to ensure that its suite of plans are appropriate as the site develops.

7.7.Climate Change

Events that are attributed to climate change continue to provide challenges for fire and rescue services across the country. As global warming continues the threat of prolonged periods of severe weather which may range from extremely wet winters that bring the risk of intense downpours, flash flooding and severe flood events to warmer drier summers which can bring the increased risk of drought and wildfires

According to the Met Office, the summer of 2018 has been the hottest on record for England and joint hottest for the UK as a whole. With these high temperatures came a very challenging

summer for the emergency services. LFRS attended over 600 grassland incidents²⁹ and one in particular, Winter Hill, lasted over 40 days.

Future climate change predictions show that extreme flood events such as those seen in December 2015 and heat waves seen in summer 2018 could become more frequent and severe, putting homes, businesses and infrastructure at greater risk.

Response:

Whilst LFRS continues to develop and improve our operational capabilities in regard to events that are attributed to climate change, the Service also has in place a Climate Change and Environment Strategy (CCES). This strategy provides a framework for an ongoing programme of action on environment and climate change issues, with an aim to ensure that LFRS is not only prepared for the impact of climate change operationally, but to also ensure that we continue to look to reduce our impact on the environment.

²⁹ Incident Recording System

8. Technological Risk

Today's technology is constantly changing, improving and evolving the way that the world operates. It makes things more convenient and accessible and provides efficiencies that are both cost and process related.

As a Service we recognise the benefits that new technologies bring and so to keep abreast of these new technologies we have in place a three year ICT strategy supported by an annual ICT development schedule. This is how the Service plans for its technological changes that are necessary to ensure all our systems are sustainable.

At present the Service is undertaking a programme of work to review and improve all our information management systems and processes which provides a long term vision for the Service in the way our information is managed, stored, governed and integrated.

Looking ahead to future technological changes and risks that these changes may pose, a nationwide emergency services mobile communications programme (ESMCP) is currently in its planning stages. The programme is set to provide the emergency services with a revolutionary new communication system. It will include the development of a system called the emergency services network (ESN) which will provide the Fire & Rescue Service, Police and Ambulance Service with voice and broadband data services. The programme will also provide the governance for a number of projects which will see user devices upgraded, several Control room upgrades and the introduction of an air to ground (A2G) network.

It is intended that the ESN will provide a mobile network that has extensive coverage, high resilience, suitable security measures and hi-tech functionality that will allow users to communicate under the most challenging circumstances, which should in turn allow Control room operators to make better assessments of the incident occurring. Clearly, whilst this technology is intended to provide the emergency services with significant improvements, it also comes with its share of risks; the system is to be run on a mobile network and will be delivered through the same channels for all users, meaning there may be issues for users during peak hours and similar risks such as denial of service. These risks will be managed as part of the regional programme of work of which LFRS is a part. The Service's local project as part of this programme is now being established.

In the current climate Security of systems and data is becoming an increasing priority for both ICT and Information Management therefore our strategy includes an increased security stance that prioritises security of both technology and information.

9. Organisational Risk

9.1. Business Continuity

The Civil Contingencies Act (2004) requires all Category 1 Responders to have plans in place to respond to all emergencies. This includes adequate business continuity plans (BCP) enabling the critical business functions the Service provides to continue to operate, despite serious incidents or disasters that might otherwise have interrupted them.

Our business continuity considerations encompass the whole Service so that all critical functions and activities are considered, not just those involving the emergency response aspect. These plans include the dedicated Urban Search and Rescue (USAR), International Search and Rescue (ISAR) and DEFRA trained teams who are often called upon in times of crisis. Business continuity arrangements also have to be taken into consideration for our partners such as North West Fire Control (NWFC) who are critical to our operations thus ensuring that our response will also meet their standards along with our own.

LFRS regularly reviews all of its business continuity plans and associated policies. At the time of writing, there is a review ongoing which is looking to ensure that LFRS continues to have an effective framework through which assessments of both internal and external risks impacting on business continuity are undertaken. Additionally business continuity plans are being reviewed to ensure that the Service continues to be capable of maintaining acceptable standards of service delivery for each critical business process following disruption. Once updated a robust business continuity policy including business continuity plans that cover strategic, tactical and operational levels across all departments and areas of work within the Service will be in place.

9.2. The General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (DPA2018)

The General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (DPA2018) came into force on the 25th May 2018, replacing the Data Protection Act 1998 (DPA). The GDPR has direct effect across all EU member states and has already been passed. This means the Service will have to comply with this regulation and will still have to look to the GDPR for most legal obligations. However, the GDPR gives member states limited opportunities to make provisions for how it applies in their country. One element of the DPA 2018 is the details of these derogations. It is therefore important the GDPR and the DPA 2018 are read side by side. The GDPR and DPA 2018 outlines the rights and responsibilities designed to safeguard personal data relating to living natural persons. They make significant and important requirements on organisations about how they collect, process and store personal and special categories of data (previously sensitive data). These new laws will provide harmonisation for so many businesses and services operating across geographical borders. This is crucial to businesses, organisations and individuals so that there is international consistency around data protection laws and rights. As with the DPA, the GDPR applies to 'personal data'; it is for those who have day-to-day

responsibility for data protection. However unlike the DPA, the GDPR's definition is more detailed in that it makes clear that information such as an online identifier – e.g. an IP address – can be classed as personal data. This more extensive definition addresses changes in technology and reflects the way organisations process information about people.

At the time of writing the Service is undertaking a large, complex piece of work in order to ensure all our processes and procedures including organisational responsibilities surrounding the processing of personal data, are GDPR-compliant.

10. National & Regional Risk

10.1. National Resilience Assets

In addition to the day to day prevention, protection and response activities that LFRS undertakes within our home county of Lancashire, the Service also has in place an Urban Search and Rescue (USAR) unit and the High Volume Pump (HVP). USAR technicians are trained to respond and deal with a wider range of incidents, such as a large-scale structural collapse incident, that may require enhanced safety and the use of specialist equipment. The HVP can move large quantities of water over long distances in support of firefighting or flooding events. All National Resilience assets are maintained ready for immediate deployment both locally and nationally to support affected services during major incidents.

10.2. International Search and Rescue

LFRS also form part of the UK International Search and Rescue Team who deploy on behalf of the Department for International Development to disaster zones around the world. Specialist staff and Canines are able to provide USAR and Medical interventions in extreme disaster conditions following natural disasters.

10.3. Specialist Response Vehicles

LFRS has an array of specialist equipment including the High Volume pump (HVP) Aerial Ladder Platforms (ALPS) and Wild Fire Units (Softtrak and Polaris) which are all operated by expertly trained staff. These resources provide vital response capabilities to respond to any incident including those that may occur outside of the county.

10.4. National Risk Assessment and National Risk Register

Risks the UK faces are continually changing; to monitor these risks the government produces a National Risk Assessment (NRA) that records the risks that the UK and its citizens could face over the next five years. The NRA is a confidential assessment that is produced each year through consultation with a wide variety of experts both across government departments and within other organisations. The National Risk Register (NRR) is the public version of this assessment that aims to deliver the first step in providing advice on how people and businesses can better prepare for civil emergencies.

Whilst most emergencies will be dealt with by local authorities there are some events which, if to occur, would have a serious impact on a much wider scale causing a civil emergency within the UK. All risks within the NRR have been written in the form of an event or scenario, such as a severe weather event or a cyber-attack, and detail what exactly the risk is, if the event has occurred previously, what is being done about it and what to do in the event of an emergency.

To support this, the government provides guidance to local resilience forums on how to interpret the risks in the NRA and NRR; this enables local authorities to produce their own local assessments of risk. This ensures that risk assessments at all levels of government are integrated and underpins coherent emergency planning across the country.

10.5. Lancashire Resilience Forum

The Civil Contingencies Act 2004 provides a single coherent framework for emergency planning and response across both local and national levels forming the overarching structure for civil protection in the UK.

The Act lists organisations that are included; these are divided into 2 categories with each category imposing a different set of duties on local responders. Category 1 responders are subject to the full set of civil protection duties and include organisations who provide a fundamental response to most emergencies such as the Emergency Services, NHS organisations, Local Authorities and the Environment Agency. Category 2 responders have a lesser set of duties as they are less likely to be involved in the core of the planning work, but they will be heavily involved in incidents that affect their own sector such as, for example, utility companies.

Part of the Act necessitates that Category 1 and Category 2 responders form a local resilience forum to consult, collaborate and disclose information with each other. In Lancashire this is known as the Lancashire Resilience Forum (LRF).

The LRF provides the opportunity for agencies to identify potential risk, and produce emergency plans, to either prevent or mitigate the impact of any incident on their local communities. The risks identified by the LRF are assessed and documented in the Community Risk Register. This register provides a brief overview of significant risks based on local conditions, infrastructure and geography and assists the LRF to prioritise planning, facilitate training and organise exercises to ensure that adequate arrangements for responding to an emergency are in place and up to date.

Response:

Whilst LFRS has a robust risk assessment process in place for a multitude of incidents and hazards, to meet our statutory duties we are also an active member of the LRF and chair a number of groups including HAZMATS (hazardous materials), 'warn and inform' and the general purpose group. By working in affiliation with our partners and participating in multi-agency testing exercises, the Service has assurance of emergency preparedness.

10.6. **Brexit**

The Local Resilience Forum have highlight an emerging risk in the light of a potential no deal Brexit. Multi agency response is to plan for a reasonable worst case scenario and the likely impact on each organisation. LFRS have attended several meetings and along with other Cat 1 and Cat 2 responders, considered potential risks and issues.

These are the short term risks that could have the most impact on LFRS.

- **Stockpiling**
- **Procurement**

Stockpiling

The term is used to describe storing large accumulates of stock (good/materials). This has been highlighted as a high level risk for LFRS as it increases risk of fire and the risk to Firefighters if an incident does occur. Additionally, there is a risk that chemicals will not be readily available from the EU, post Brexit, therefore this could promote additional stockpiling resulting in increasing the risk of Hazardous Material incidents.

Response:

LFRS will work very hard to make sure all high level risk (Level 4 and 5) is assessed against information stored on the Site Specific Risk Information system and update accordingly. Moreover, the Service will work towards heightening the local awareness of each Station by allowing crews to gather local information and Environmental audits.

Procurement

There is a huge uncertainty at present about what post deal could mean for Procurement outside of the EU. It' is believed that due to this; current stock levels of kit and supply chain issues may increase the price on certain pieces of equipment.

Response:

Currently at LFRS there isn't an adequate solution to reduce the risk due to the level of uncertainty regarding the deal. However, the Service will commit to review the potential impact on all supplies and look at potential alternatives.

10.7. Terrorism

Terrorism presents a serious and sustained threat to the UK and UK's interests abroad. Lancashire has suffered the effects of Terrorism in the past, particularly from Northern Ireland related activity, and the current threat from extremism means the service remains vigilant and ready to respond. Due to the increase in terrorist attacks within the UK over the past year, the initiation of a review of the "Joint Operating Principles for Emergency Services – Responding to a Marauding Terrorist Firearms Attack" guidance was commissioned, and there remains the expectation that fire & rescue services will form part of a multi-agency response to such events.

Response:

To ensure our emergency preparedness LFRS maintains a cadre of specially trained officers should a terrorist attack occur. Our CBRN (Chemical, Biological, Radiation and Nuclear) officers are trained and equipped to be used as Gold or Silver Commanders at an incident. These officers have participated in multi-agency exercises designed to test our response and that of our partners. In addition to the CBRN officers, LFRS maintains a cadre of National Inter-agency Liaison Officers (NILO's) who have received in depth training in responding to terrorism and organised crime. The Service also maintains close links with Lancashire Constabulary and Lancashire Resilience Forum partners to ensure that joint plans and ways of working are in place.

11. Main Findings

The purpose of this document has been to identify and record the significant risks that are present within Lancashire. By understanding the nature of these risks and how members of the communities we serve and our staff may be harmed by them, LFRS is better placed to ensure that suitable measures for mitigation are in place. Risk is often seen as a negative occurrence, or the chance of something unpleasant happening that may cause injury or loss; however risk is simply uncertainty and can therefore also provide opportunity. By exploiting opportunities that a risk presents, we can provide positive impacts such as innovative ways of working that hadn't previously been identified.

The main finding of this SAoR identified is that our communities are changing. People are living longer; leading to changes to physical wellbeing, mental health and to the increased potential for social isolation. Indeed it is widely recognised that those most in need are often those who are the most difficult to reach. To address this, the Service is developing the way that we deliver our prevention services, to ensure that effective, integrated ways of working with our partners takes place on an individual level.

Furthermore, when looking to predict those most at risk of fire, LFRS has traditionally used a geographically based approach. However, future targeting methods may need to be refocused to incorporate demographic groups to ensure that the Service is able to concentrate resources where they are most required.

Road Traffic Collisions (RTC's) continue to be a cause for concern. Our roads are getting busier

and RTC's frequently lead to devastating, life changing consequences. By continuing with our preventative education packages, the Service remains committed to providing engaging road user education sessions that aim to influence behaviour using a targeted approach. Highlighting the significant impacts that may occur and the need for safer roads and safer road users, not only saves lives, but also works towards reducing the pressures faced by LFRS and our partner organisations.

As a result of the devastating Wildfires in summer 2018, the Service has highlighted a need to progress a new workstream to have our own Service Burns Team in order to replicate the great work undertaken by teams from other areas of the country as part of our National Resilience request. This will supplement the enhancement to wildfire equipment and planning LFRS has already completed.

This document is a component of LFRS' planning activity, with a clear focus on reducing risk year on year through activities as a whole.