

PART II

NOT FOR PUBLICATION AS THE REPORT CONTAINS INFORMATION RELATING TO THE FINANCIAL OR BUSINESS AFFAIRS OF ANY PARTICULAR PERSON (INCLUDING THE AUTHORITY HOLDING THAT INFORMATION). (LOCAL GOVERNMENT (ACCESS TO INFORMATION) (VARIATION) ORDER 2006 - ACCESS TO INFORMATION – CHANGES TO SCHEDULE 12A)

ITEM NO 9

TYNE AND WEAR FIRE AND RESCUE AUTHORITY

MEETING: 5th NOVEMBER 2018

SUBJECT: IRMP – REVIEW OF HOW WE RESPOND RELATIVE TO RISK

JOINT REPORT OF THE CHIEF FIRE OFFICER/CHIEF EXECUTIVE (THE CLERK TO THE AUTHORITY) THE STRATEGIC FINANCE OFFICER AND THE PERSONNEL ADVISOR TO THE AUTHORITY

1 PURPOSE OF THE REPORT

- 1.1 This report presents proposals resulting from the Integrated Risk Management Planning (IRMP) review of how we respond relative to risk and seeks the Authority's approval to carry out detailed staff, public and key stakeholder consultation regarding the proposals.

2 BACKGROUND

- 2.1 The IRMP process is the vehicle the Authority uses to make significant changes to the shape of the service, ensuring the planning, design and delivery of services in a way that balances efficiency and community risk. The Authority have used the IRMP process for over 15 years to change the service, strengthen prevention, reduce costs, reduce demand and risk in our communities, illustrated in *Figure 1*.
- 2.2 Since 2010, the Authority's IRMP actions have developed against a backdrop of significant reductions to the Authority's revenue budget, because of a combination of disproportionate and significant cuts in Government funding and having to address major additional cost pressures (e.g. inflation, pension increases and pay awards etc.) over this prolonged period. The impact of which has seen the Authority's Net Budget Requirement reduce by £11.3m from £59.4m to £48.1m. This represents a significant budget reduction of 19% since 2010/11.

- 2.3 Accounting for cost pressures the Authority has had to manage a real cut to its revenue budget of just under £25m up to and including 2019/20 budget projections. The real underlying cut, which the Authority has had to manage, is therefore just over 42% of its 2010/11 Net Budget Requirement.
- 2.4 The Authority has managed to balance efficiency and risk by having to take some very difficult decisions. The fact that the Authority has had strong financial management arrangements in place, which has helped to achieve budget efficiencies of almost £12m in addition to the various IRMP actions the Authority has implemented saving another £13m since austerity measures began. The Authority has reviewed every aspect of its business and initially protected the frontline service as far as possible with more emphasis focused on back office activities and a number of specialist parts within the organisation.
- 2.5 This stance could not be maintained because of the scale of the cuts applied to the revenue budget up to 2019/20, which resulted in the review of the Authority's response model and diversionary activities included in the 2013/2017 IRMP. The revised response model avoided station closures; reduced pumping appliances, introduced targeted response vehicles (TRVs), prioritised responses to higher life risk category 1 and 2 incidents, and culminated in the introduction of riding four on appliances from January 2018. These changes made to the response model have previously saved the Authority almost £5m as a result.
- 2.6 The current Medium Term Financial Strategy (MTFS) reported to members in February 2018 (Minute 80/2017 refers) shows that there remains a budget gap of potentially £3.6m to 2021/22 based on existing financial planning assumptions. With this in mind, the Authority approved its current IRMP 2017/2020 actions to help address this shortfall in resources over the next three years.
- 2.7 The current IRMP contains three distinct actions¹, to:
- a) Explore further opportunities for collaborative working with emergency services and partners;
 - b) Examine our ways of working and consider opportunities for further efficiency and effectiveness;
 - c) Review how we respond relative to risk.

¹ Actions a) and b) subject separate reporting

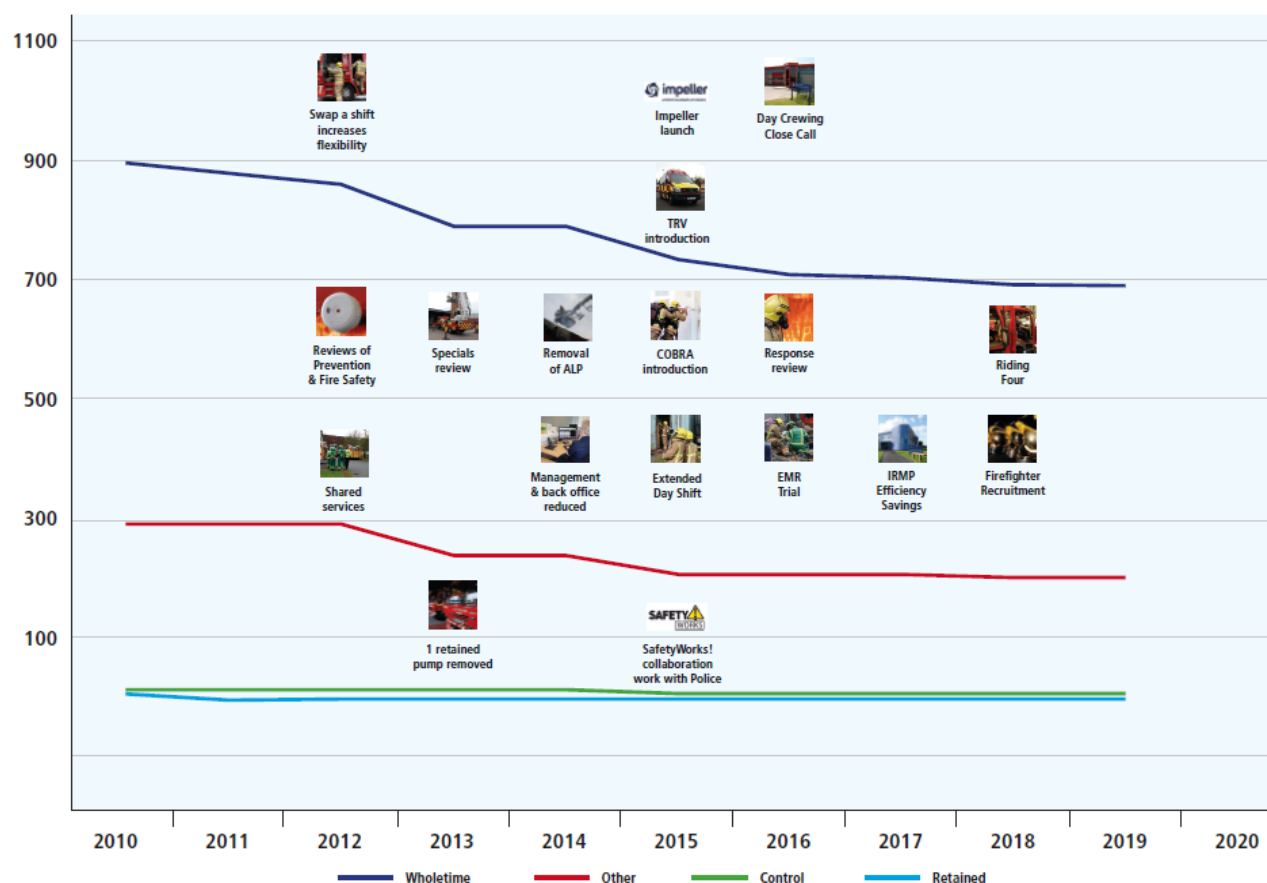


Figure 1 – IRMP Key Actions and Establishment Changes (2010 to 2018)

3 RESPONSE REVIEW PROCESS

3.1 The response review commenced with the agreed objective to examine the operational response delivered by the Authority. This examination included ensuring opportunities for efficiency, in relation to the risks we face, were explored so that we achieve the best possible outcomes for our community.

3.2 The review was carried out by a cross organisational group, following the Authority's review process. This involved:

- Reviewing the current response model, identifying areas for improvement and opportunities to build on current flexibility;
- Objectively challenging current arrangements, to identify potential options for improved and more efficient delivery;
- Considering the type and quantity of resources required; including people, skills, equipment and vehicle types;
- Considering all existing and projected risk, using all available data and local expertise;
- Considering technological developments and applications;
- Considering local, regional and national pictures – e.g. current and anticipated legislation and policy; local guidelines and good practice; what other emergency services are doing;

- Considering the impact on, and effect of, other IRMP Reviews and other areas of the Service.

- 3.3 The review group have undertaken extensive work analysing the delivery of responsive services, utilising data and research from across the fire and rescue service sector. The main areas of focus have been under the headings set out below.
- 3.4 **Data Analysis** – Building on the current response model, the review focused on the critical aspects of historical response data and the performance reported to Authority. The analysis involved studying incident types, attendances, time of day, seasonal data, speed and weight of response data and the skills and resources required to safely and effectively deal with the range of operational incidents encountered.
- 3.5 **New Technology or Approaches** – The review considered what advancements in firefighting technology or approaches and, where reasonably practicable, how they could be incorporated into future practice.
- 3.6 **Crewing Levels** – A focus of the review has been to review the existing approaches to crewing appliances whilst developing proposals for improvements that also generate long-term savings and ensure the maintenance of speed and weight of response, where possible. The review also considered the crewing levels in control with a view to ensuring they match call demand and administrative workload. The review group undertook work with other FRS to ensure that any proposals could be achievable in practice.
- 3.7 **Crewing Patterns** – In support of the review of crewing levels, research into alternative crewing patterns was undertaken to ensure that they provided value for money. The review group considered proposals, where appropriate, for the delivery of an effective and efficient fire and rescue service. One focus of this activity was how changes could support the direction of travel from Government's workforce reform agenda.
- 3.8 **Mobilising** – The review has considered changes in the way the Service mobilise to incidents. Particularly, where this might assist in the maintenance or improvement of attendance times including building upon the dynamic mobilising work contained in earlier IRMP reviews. The review also considered efficiency and performance within mobilising control.
- 3.9 **Horizon Scanning** – The review team also considered the potential future needs of the Service and the main drivers of change within the FRS nationally. In particular, the fire reform agenda and proposed inspection regime were key to this aspect of the review.
- 3.10 **Sector Comparison** – The review team undertook an appropriate range of comparative research visits to FRS's across the country. The outcomes and supporting information from that research has been critical to understanding changing response and resilience needs as well as assisting in the generation of proposals.

4 CURRENT RESOURCES

- 4.1 The Authority discharges its statutory response functions through 17 community fire stations (CFS): 14 whole time, two day-crewing close-call (DCCC) and one on-call (utilising the retained duty system). Seven CFS have two pumping appliances, 10 have one pump (seven whole time, two DCCC and one on-call). Two CFS have a targeted response vehicle (TRV) whilst two further TRVs are introduced between 18:00 and 23:59 on a risk basis. A further TRV is located at Chopwell and is crewed as required by on-call firefighters. *Figure 2* below, illustrates the disposition of resources. The current cost of crewing the statutory response functions, including firefighters, flexible duty officers and control staff is approximately £24.5m per annum.

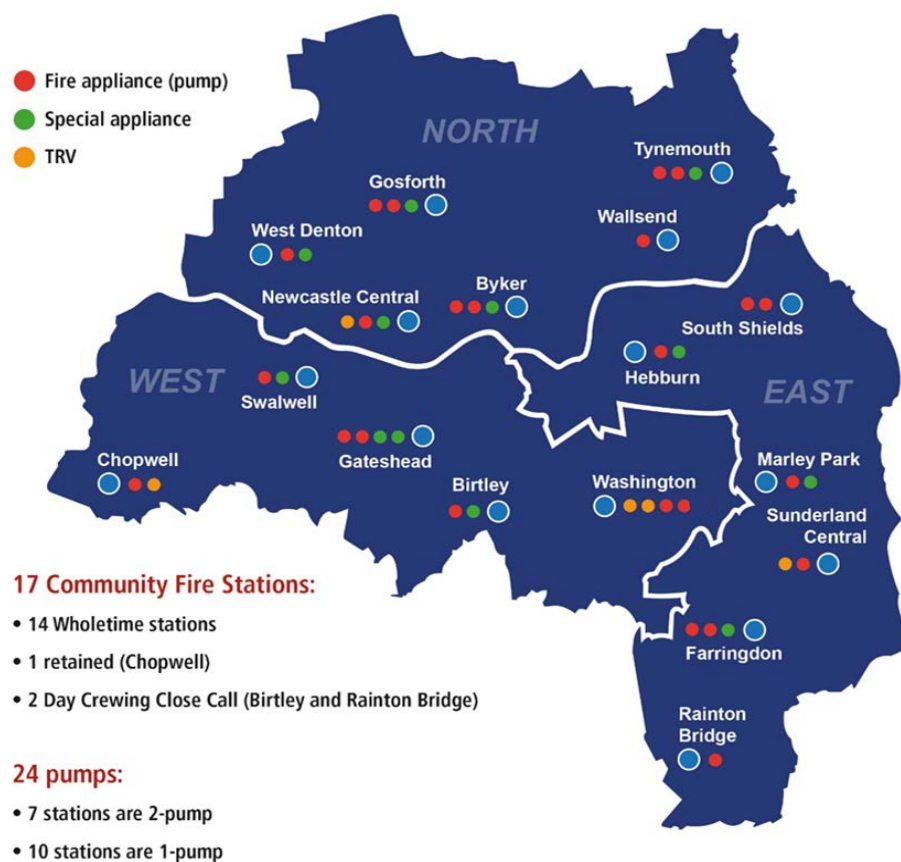


Figure 2 – Current disposition of operational resources

5 COMMUNITY RISK AND INCIDENT DEMAND

- 5.1 The review was based on community risk and incident demand in Tyne and Wear. Members should note that community risk and incident demand are not the same thing. A way of considering this is incident demand being what happens when community risk mitigation is inadequate, whereas the community risk is inherent in the community because of its makeup and demographics.

- 5.2 The role of the fire and rescue service is to mitigate risk in the community to reduce the likelihood of fires, and other emergencies happening, thus reducing demand and the impact on individuals and communities. The Community Risk Profile (CRP)² is an overview of our assessment and analysis of risk. Derived from analysis of detailed incident data, census data, geographical and environmental datasets and information from partner organisations, the CRP creates a picture of risk across Tyne and Wear to enable resource to be targeted strategically.
- 5.3 One important feature of this risk profile is the relationship between risk, demand and levels of deprivation. Tyne and Wear, similar to other Metropolitan areas, has a risk based on local demographics particularly when considering accidental dwelling fires and associated injury rates. This correlation presents a higher level of risk and incident demand than most other areas.

Regional Average Rank 2010		Average IMD Rank
Tyne and Wear	Most Deprived	12324
North East		12943
London		13045
North West		13699
West Midlands		14315
Yorkshire and The Humber		14455
East Midlands		17055
South West		18141
East of England		19743
South East	Least Deprived	20723

Regional Average Rank 2015		Average IMD Rank
Tyne and Wear	Most Deprived	13184
North East		13586
North West		14040
London		14065
West Midlands		14576
Yorkshire and The Humber		14661
East Midlands		16887
South West		18073
East of England		18828
South East	Least Deprived	20825

Figure 3 – Index of Multiple Deprivation (IMD) Data showing the relative position of Tyne and Wear for 2010 and 2015 (latest dataset)

- 5.4 When compared to incident demand and community risk this presents a strong correlation between the highest areas of deprivation and incidents across all risk levels³. Risk level one incidents are those involving very significant life and property risk and are the highest priority for the Authority. This risk category is not exclusively limited to fire incidents and includes special services such as rescues from vehicles and hazardous materials incidents.⁴
- 5.5 The review used incident demand data from the last eight, five and three years to generate and test potential options for change. The total number of incidents per year has reduced from 18,472 to 16,941 (9.2%) over an eight year period, with special services and deliberate secondary fires being the major contributors to an in year rise from 14,688 to 16,941 during 2017/18⁵.

² Community Risk Profile 2017-20, available at <http://www.twfire.gov.uk/search/?q=community+risk+profile>

³ See Figure B1 in appendix B

⁴ See appendix A

⁵ See Figure B2 in appendix B

5.6 *Figure 3* shows the average number of incidents by station and risk level over the last five years.

Station	Duty System	Appliances	Risk Level 1	Risk Level 2	1 & 2 Total	Risk Level 3	Risk Level 4	3 & 4 Total	Grand Total
Newcastle Central (C)	WT	1 17 4 12	330	137	467	700	534	1234	1701
Byker (F)	WT	1 2 9 9	462	179	641	546	411	958	1601
Gateshead (V)	WT	1 2 3 5	333	119	452	394	538	932	1311
Sunderland Central (N)	WT	1 17	238	104	342	418	429	847	1201
South Shields (K)	WT	1 2	224	101	325	326	426	751	1082
West Denton (A)	WT	1 7	199	111	310	296	491	787	1081
Gosforth (E)	WT	1 2 3	239	103	342	415	321	736	1044
Marley Park (M)	WT	1 3	177	87	264	290	382	672	924
Tynemouth (J)	WT	1 2 8	215	82	297	286	296	582	817
Washington (S)	WT	1 2 17 17	126	72	198	166	355	521	741
Farrington (Q)	WT	1 2 10	143	66	209	229	303	532	730
Hebburn (T)	WT	1 6	145	75	220	204	281	484	727
Swalwell (Y)	WT	1 16	165	59	224	195	223	419	645
Wallsend (G)	WT	1	140	50	190	161	226	388	567
Rainton Bridge (H)	DC(CC)	1	97	52	149	131	232	363	510
Birtley (W)	DC(CC)	1 14	80	34	114	112	145	257	376
Chopwell (Z)	OC	2 17	18	4	22	13	27	40	55
		1 2 Fire Appliance Cat01/02			17 Targeted Response Vehicle			0 Special Appliance	

Figure 3 – Average number of Incidents by Station and Risk Level 2013/14 to 2017/18

5.7 Further detail regarding risk and incident demand is contained in appendices B and C to this report.

6 PROPOSALS

6.1 This section provides an overview of the proposals for reshaping responsive services over the next three years. Based on the proposals outlined below, the 'best mix' was developed with the aim of reducing costs whilst having the least impact on response times, weight of response, community and firefighter risk.

6.2 The proposals are operationally integrated and as such, they have been developed as programme of changes rather than isolated options.

6.3 It is clear that any reduction in the number of frontline appliances would increase the average time of attendance and the weight of response. The strategy employed in the design of the proposals, was to protect as far as reasonably practicable the average response time and weight of response to life and significant property risk incidents (risk level one and two), whilst allowing a planned increase in the average response times to lower risk incidents (risk level three and four).

6.4 The proposals are:

Proposal 1 - Dynamically adjust the distribution and availability of appliances based on risk and demand

Proposal 2 – Introduce a range of duty systems based on risk and demand

Proposal 3 – Adjust the staffing model to deliver a more effective and efficient use of resources

- 6.5 If approved, the review group recommend a staged implementation over the next three years. This would enable clear monitoring to occur, and thus ensuring the controlled management of community and firefighter risk.
- 6.6 **Proposal 1 - Dynamically adjust the distribution and availability of appliances based on risk and demand**
- 6.7 Under these proposals, resources including pumping appliances, special appliances and targeted response vehicles (TRVs) would be re-positioned based on community risk and expected demand.
- 6.8 The dynamic staffing of TRVs has proven to be both an effective and efficient method of delivering this resource based on risk. Extending this approach could support a much more flexible response model that reflects both daily and seasonal demand to risk level four incidents whilst meeting future demands in terms of other risk levels, thus supporting fast response to higher risk incidents.
- 6.9 Following a review of our response model and in particular, risk level four incidents by hour of day, it has become clear there was an opportunity to respond differently to this type of incident. Examination of the data suggests the highest levels of demand for risk level four incidents is from 16:00 to 23:00hours.
- 6.10 In addition to daily trends, there are seasonal trends for risk level four incidents namely March – April, June, July and August, and the bonfire period during November⁶.
- 6.11 The positioning and availability of all resources must incorporate a flexible staffing approach that satisfies risk and demand. For example, if demand for TRV attendance drops, it may be more appropriate to reduce the availability and crew associated category 02 appliances.

⁶ See Figure B3 in appendix B

- 6.12 The review group propose relocating one category 02 appliance from Gosforth to Newcastle Central and a further category 02 appliance from Washington to Sunderland Central. This relocation supports the additional relocation of the two Washington based TRVs to Newcastle Central and Sunderland Central respectively.
- 6.13 The main benefit of this approach is to provide a more flexible range of response options, so that the most appropriate appliance type attends incidents based upon risk level. This proposal builds on the successful implementation of TRVs and the recent pilot of dynamic staffing of TRVs during inclement weather undertaken during 2017/18.
- 6.14 Further analysis of the disposition of special appliances indicates that the balance of special appliances can be improved or amended in line with the redistribution and/or designation of the TRVs. The proposed appliance disposition is set out in *Figures 4 and 5* below.

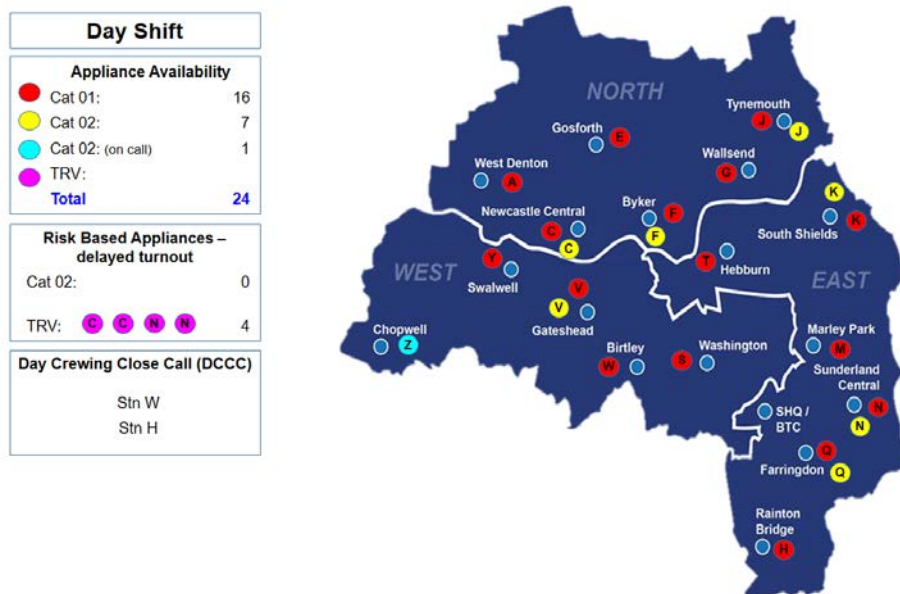


Figure 4 – Proposed appliance disposition during dayshift (Proposal 1)

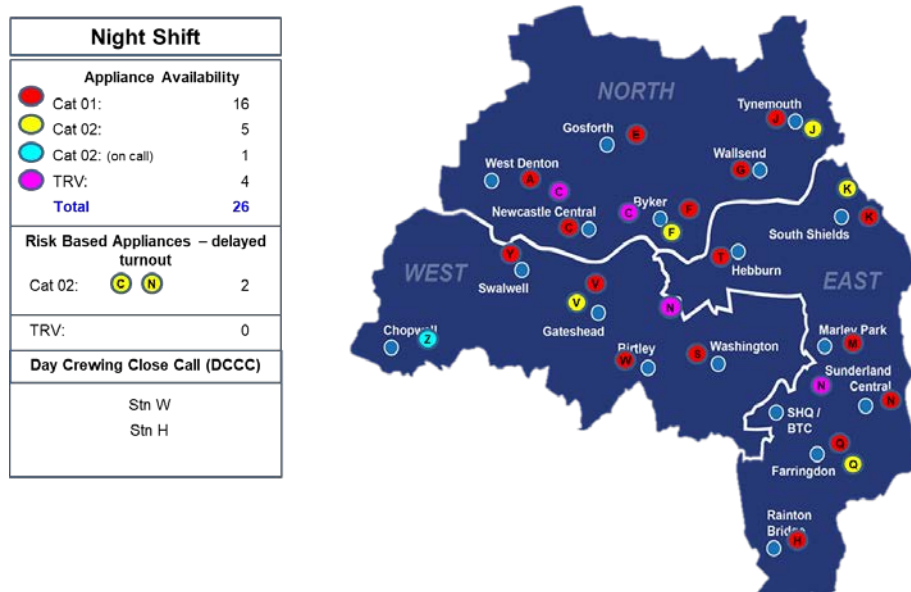


Figure 5 – Proposed appliance disposition during nightshift 18:00 to 00:00 (Proposal 1)

- 6.15 Data analysis indicates that the introduction of proposal 1 would marginally increase average response times. The time to risk level one incidents would increase by two seconds for the first appliance and one second for the second appliance. The time for risk level two incidents would increase by one second for the first appliance and five seconds for the second appliance.
- 6.16 This proposal would involve reducing the operational establishment by 16 firefighting posts and result in full year savings of approximately £717,000.
- 6.17 **Proposal 2 – Introduce a range of duty systems based on risk and demand**
- 6.18 This proposal involves redefining the duty system operated on certain stations to better accommodate relatively lower levels of community risk and incident related demand whilst minimising the impact on attendance times.
- 6.19 On-call firefighters are a vital part of today's modern fire and rescue service. Nationwide, approximately 18,000 on-call firefighters provide efficient, cost-effective and reliable fire and rescue cover to around 60% of the UK. Most on-call firefighters are in rural areas whilst a smaller number in urban areas are based on stations alongside whole time and day crewing staff.
- 6.20 The Service currently runs duty systems that range from whole time on the majority of stations through to the on-call (retained duty system) at Chopwell. Analysis of potential costs and benefits of the range of suitable duty systems indicates that the targeted introduction of a Day Crewing (On-call) and On-call (Retained) duty systems would provide a balanced approach at certain locations. The Day Crewing (On-call) duty system would involve a two watch system where crews are available throughout the day and revert to an 'urban' on-call system being available to respond within a pre-determined time to their home station or a specific agreed location. This duty system differs from the Day Crewing Close Call system already in operation on two locations and is expected to be based on nationally agreed terms and conditions.
- 6.21 By utilising this expertise and exploring different ways of working, the review group propose the expansion, development and diversification of duty systems available to our workforce. The introduction of an urban on-call duty system directly supports this approach. This duty system has broader benefits, than existing duty systems, to both the service and employees particularly when deployed alongside the existing whole time system. As such, the review group recommend the introduction of contracts that offer the benefits of both systems. Following implementation of this proposal, the expectation is that employees would operate a range of duty systems that provide a more sustainable and balanced response option rather than the removal of frontline resources completely.

- 6.22 Analysis indicates that Wallsend and Hebburn are most appropriate for the use of the Day Crewing (On-call) duty system.
- 6.23 To facilitate an effective transition to Day Crewing (On-Call) at both locations the review group propose a cover arrangement utilising the category 02 appliances at Tynemouth and South Shields. This would involve overnight standby arrangements introduced and facilitate the collection of empirical incident data regarding the impact of the duty system introduction and associated targeted risk reduction activity. Further use of On-call (Retained) duty system will also provide cost effective emergency cover in certain areas, whilst supporting resilience arrangements for protracted incidents when a more phased supporting attendance is suitable. Greater use of Day Crewing (On-call) and On-call (Retained) duty systems could create opportunities to diversify the workforce, allow for the future development of a long-term sustainable staffing model and support greater operational resilience.
- 6.24 Analysis also indicates that the Category 02 appliance (Q02) at Farringdon is suitable for conversion to the on-call duty system. This would involve the appliance being available on-call as required to support incident requirements. On-call arrangements would be on a predetermined delay based on risk and incident related demand. Standard approaches across the country utilise five, seven or ten minute delays. Staff attract an availability allowance for providing this cover.
- 6.25 Data analysis indicates that the implementation of proposal 1 and 2 simultaneously would increase response times to all incidents. The time taken to reach risk level one incidents would increase by 17 seconds for the first appliance and 35 seconds for the second appliance. Average attendance time for risk level two incidents would also increase by 20 seconds for the first appliance and 34 seconds for the second appliance.
- 6.26 The introduction of proposals 1 and 2 would involve a reduction in whole time operational establishment of 58 posts and increase on-call (retained) establishment by 12 posts with a combined net full year saving of £2.337m. The disposition and crewing of appliances following implementation, shown in *Figures 6 to 9* below.

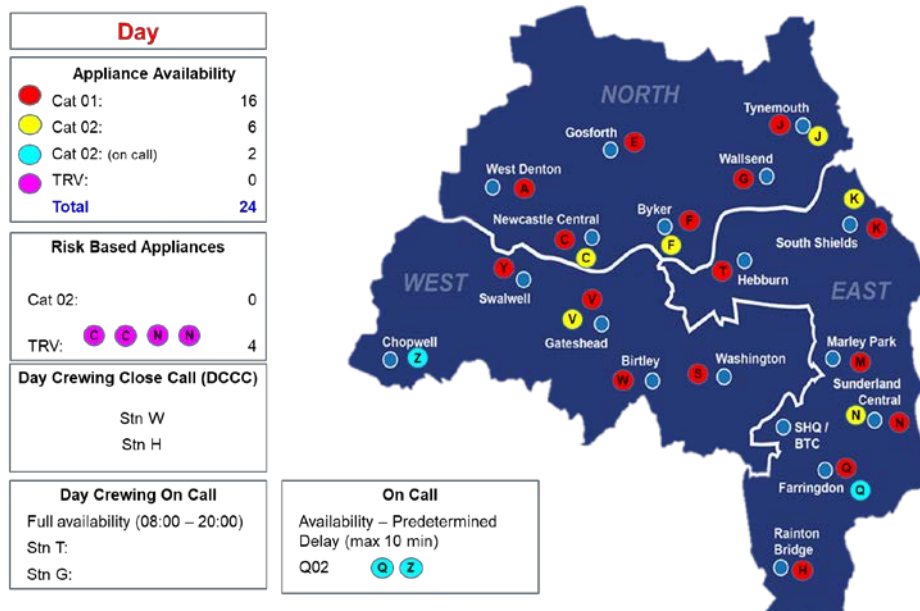


Figure 6 – Proposed appliance disposition during dayshift (Proposals 1 & 2)

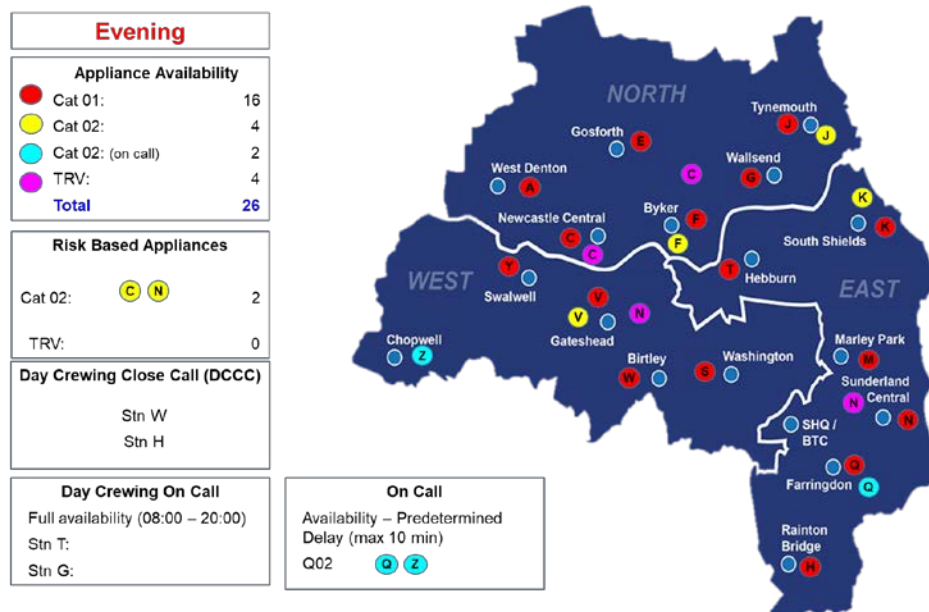


Figure 7 – Proposed appliance disposition during the evening (up to 20:00hrs) (Proposals 1 & 2)

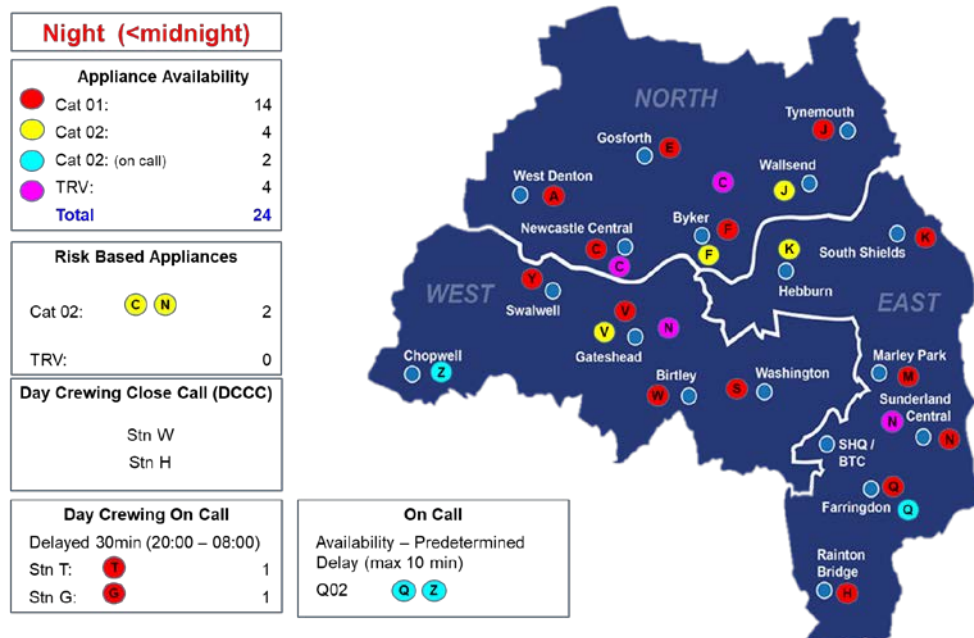


Figure 8 - Proposed appliance disposition during at night (20:00 to 00.00hrs) (Proposals 1 & 2)

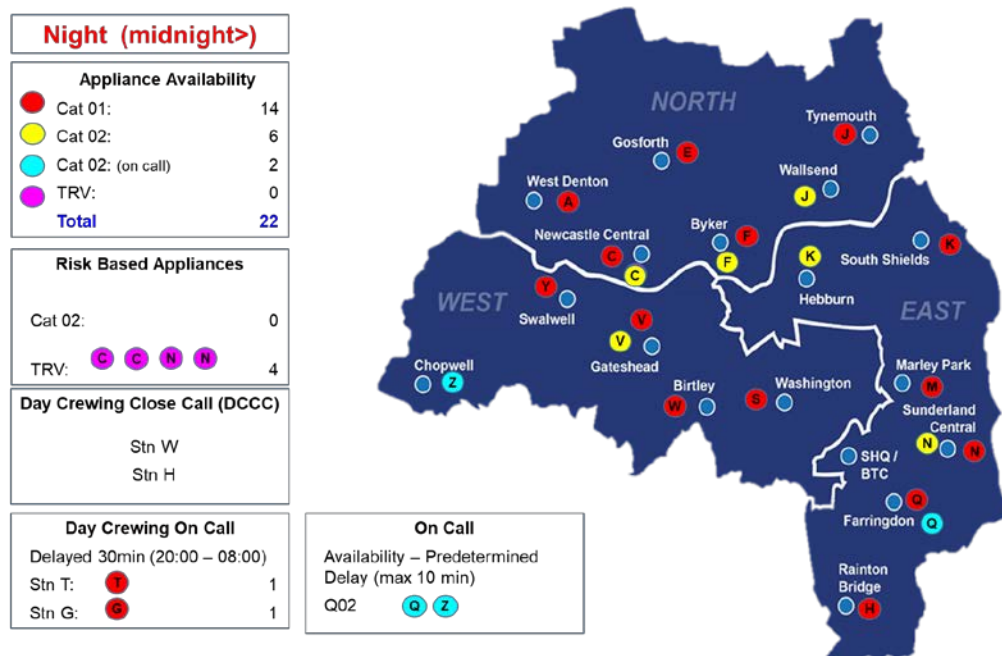


Figure 9 - Proposed appliance disposition during at night (00.00 until dayshift) (Proposals 1 & 2)

6.27 **Proposal 3 – Adjust the staffing model to deliver a more effective and efficient use of resources**

6.28 Within this proposal there are three elements proposed by the review group, namely:

- Adjust start and finish times of shifts
- Moderate staffing levels at all stations
- Amend staffing levels in mobilising control

6.29 **Adjust start and finish times of shifts** – Figure 9 highlights the average pattern of daily demand and corresponding risk based incident rates. This also illustrates how the extant whole time shift pattern maps against this demand. An overview of current shift patterns are set out in appendix C (C1.12 and C1.13) for information.

6.30 The review group found that current shift patterns do correlate with the research undertaken in relation to incident demand, thus reducing the optimisation of available resources. The group found that with some subtle adjustments the utilisation of available staff could be maximised to improve the delivery of services to our communities whilst aligning more directly with incident demand.

- 6.31 In particular, ensuring shift patterns have appropriate shift length and start / finish times can ensure the right people with the right equipment are available at the right time and in the right place.
- 6.32 The review group propose that dayshifts should be eight hours in length and finish no later than 17:00hrs. Nightshifts should be 16 hours length and incorporate some flexibility to support demand and training requirements, see *Figure 10*.
- 6.33 The review group found that amending the shift times could support the introduction of a more flexible demand based response model. The revised times could facilitate crewing the TRVs earlier in the evening making them available over a wider band in the afternoon and evening when demand from lower risk level incidents begins to rise.
- 6.34 In addition, aligning core operational activity, such as business safety visits, has the potential added benefit of facilitating closer partnership working with those organisations that tend to work core office hours. Any agreed changes would be applied proportionately to mobilising control shift times to ensure alignment across the incident management process. The final pattern would need formal staff negotiation and would facilitate the removal of the current extended day pattern that has proven unpopular with many of our employees.

Hour of the day	Risk Level 1	Risk Level 2	Risk Level 3	Risk Level 4
00:00 - 00:59	329	149	543	422
01:00 - 01:59	267	139	536	303
02:00 - 02:59	214	98	506	212
03:00 - 03:59	182	111	429	169
04:00 - 04:59	166	83	431	148
05:00 - 05:59	150	76	371	148
06:00 - 06:59	169	72	414	133
07:00 - 07:59	213	84	537	155
08:00 - 08:59	282	109	462	229
09:00 - 09:59	344	135	547	221
10:00 - 10:59	419	132	599	281
11:00 - 11:59	458	153	597	390
12:00 - 12:59	511	145	700	455
13:00 - 13:59	490	133	631	548
14:00 - 14:59	515	159	585	704
15:00 - 15:59	516	196	618	898
16:00 - 16:59	661	242	677	1157
17:00 - 17:59	667	289	699	1452
18:00 - 18:59	716	309	913	1827
19:00 - 19:59	690	361	908	2107
20:00 - 20:59	602	340	878	1967
21:00 - 21:59	549	349	784	1389
22:00 - 22:59	477	250	680	930
23:00 - 23:59	399	196	599	613
Total	9986	4310	14644	16858

Figure 10 – Average Number of Incidents by Hour of the Day (2015/16 to 2017/18) and Proposed Shift Start / Finish Time Bands

- 6.35 **Moderate staffing levels at all stations** - the review group found that the identification and management of the capacity within any shift system is key to optimising efficiency.
- 6.36 The proposal is that staffing on all stations align in a consistent way so that two-pump stations have 10 staff per watch and one-pump stations will have six staff per watch, staffing at DC(CC) locations is not affected by this proposal.
- 6.37 The review group identified that efficient staffing management can achieve a potential reduction in the establishment of 20 firefighter posts. This would be undertaken in a phased manner to limit any impact on service delivery and facilitate effective monitoring of the implementation.
- 6.38 By implementing this proposal, the operational establishment would reduce by 20 firefighter posts with full year savings of approximately £820,000.

- 6.39 ***Amend staffing levels in mobilising control*** – Detailed analysis was conducted in relation to the staffing levels and duty pattern in mobilising control. This dedicated aspect of the review focused on considering how incident demand and associated administrative activity matches appropriate and flexible staffing methods.
- 6.40 The review group found that since the introduction of the current command and control system, used to take and manage incident based calls and related activity, the quality of call handling and speed of mobilising have improved. The review group also found there are opportunities to improve productivity. In particular, a focus on increasing utilisation across the duration of each shift may provide greater efficiency.
- 6.41 A range of demand-led and annualised staffing approaches were considered to see if greater use could be made of available staff time and closer match incident demand although each proposed pattern did not adequately match the requirements of the service in terms of productivity, flexibility and resilience.
- 6.42 If approved, the review group propose a reduction of the mobilising control establishment in a phased approach over a three-year implementation period. Under this proposal, further work would be undertaken to prepare for the reduction in establishment, redesigning work routines and administrative support so as reduce the impact this proposal when fully implemented.
- 6.43 It is proposed to reduce the mobilising control establishment by four firefighters (control) providing full year savings of just over £165,000.
- 6.44 Proposal 3 is not expected to have an impact on incident attendance times.

7 CONSULTATION

- 7.1 The review has generated a number of options for change that will affect the delivery model for the fire and rescue service in Tyne and Wear over the coming years. If the Authority approves outline consent for these options, there will follow a period of formal consultation with staff, partners and the public.
- 7.2 The proposed timescales for that internal and external consultation are as follows:
- 5th November 2018 – Fire Authority – present proposals and seek consent to consult
 - 5th November 2018 – 14th January 2019 – consultation on proposed actions
 - 14th January 2019 – Consultation close and analyse results for feedback to Fire Authority
 - 14th February 2019 – Consultation outcomes and final proposals reported to Fire Authority for approval
 - April 2019 onwards – Implementation.

- 7.3 The proposals set out in this report clearly affect current frontline services and we would expect significant debate around the right direction to take where the Authority has to balance the use of resources and risk.

8 FINANCIAL IMPLICATIONS

- 8.1 The review was conducted against the requirement to balance resource and risk and a reducing financial envelope. This report has no direct financial implications at this stage.
- 8.2 A number of potential savings have been identified by the review group and these are summarised in *Figure 11* as follows:

Proposal	Summary	Establishment Impact	Projected Cumulative Savings		
			2019/20	2020/21	2021/22
			£	£	£
1	TRV and Cat 02	16 posts removed	682,000	699,000	717,000
2	Introduce DC(OC) at G / T OC (Ret) at Q	42 posts removed 12 On-call posts added		948,000	1,620,000
3	Moderate Staffing and Shift times and Control	24 posts removed		81,000	985,000
		82 posts removed and 12 On-call posts added	682,000	1,728,000	3,322,000

Figure 11 – Summary Financial Implications (All Proposals)

- 8.3 All of the above figures are indicative and based on anticipated phased implementation dates that may be subject to change. The cumulative savings in 2021/22 assume a full year effect and all proposals implemented by 1st April 2021.

9 HR IMPLICATIONS

- 9.1 This report has no direct HR implications; however if following consultation the Authority chooses to implement any of these options, they will lead to a reduction in the number of grey book staff employed by the organisation.
- 9.2 In order to implement these changes in line with the Authority's principle of reducing staffing without compulsory redundancies if this is possible, a three year implementation period is envisaged both to managed reductions, and ensure that the impact on risk can be monitored.

- 9.3 Should this result in proposals to change structures and roles, formal consultation would be carried out with affected staff prior to any implementation, using our normal HR processes as with previous IRMP reviews.

10 RISK MANAGEMENT IMPLICATIONS

- 10.1 Community risk and related incident demand have been fully considered in reviewing our response to incidents, and discussion of this forms part of the main body of the report. The review group has undertaken significant modelling in relation to the proposals. The risks associated with the proposals are consider tolerable when balanced against the benefits gain from implementation.
- 10.2 A risk register and equality impact analysis have been maintained throughout the IRMP review process, both are available if required by members.

11 RECOMMENDATIONS

- 11.1 Members are recommended to:
- 1) Note and comment upon the content of the review of how we respond relative to risk
 - 2) Determine which options and associated proposals should go forward for consultation
 - 3) Approve a period of consultation on the review proposals
 - 4) Receive future reports as required

Appendix A

Risk level	Incident types	
1 Very Significant life and property risk	Civil Disturbance/Unlawful Act - Bomb Suspected and -Bomb Confirmed Explosion Explosion Vehicle LPG fuelled Fire- Aircraft – Large, Light or Military Fire- Building Fire- Caravan/Camping Fire- Cylinder Acetylene Fire- Persons Reported Fire- Persons on Fire Fire- Railway Train Passenger Fire- Ship Hazardous Material- Gas involved	Hazardous Material- Major Hazmat Hazardous Material-Radiation involved Rescue- Aircraft Accident Rescue- Building Collapse Rescue- Persons Trapped Rescue- Railway Accident Rescue- Confined Space Rescue from Entrapment Rescue from Height Rescue from Mud Rescue from Water Rescue- RTC Persons Trapped Rescue- Ship Sinking Rescue- Suicide Attempt
2 Significant Life and property risk	Alarm- Smoke Alarm Fire- Below Ground Fire- Boat Fire- Building Thatched Fire- Cylinder Other Fire- Electrical installations	Fire- Railway Train Goods Fire- Vehicle Large Hazardous Material- Minor Hazmat Humanitarian or Assistance- Flooding Rescue- Aircraft in Distress Rescue- Animal Rescue Large Rescue- Boat
3 Some Life and Property risk	Alarms- Automatic Fire Alarm Alarm- Gas Alarm Civil Disturbance/Unlawful Act- Civil Disturbance Fire- Barn Fire- Derelict Property Fire- Vehicle Small Fire in the Open- Large	Hazardous Material- Pipeline Humanitarian or Assistance- Dangerous Structure Humanitarian or Assistance- Person Collapsed Humanitarian or Assistance- RTC Rescue- Person Locked In
4 Minimal Life and Property risk	Alarm- Fire or Intruder Alarm at FRS Property Civil Disturbance or Unlawful Act- Call Challenged Fire- Abandoned Call Fire- Chimney/Chimney Thatch Fire in the Open- Small Fire- Now Out Fire- Late Fire Call Fire- Postbox Fire- Railway Embankment Fire- Road Furniture	Fire- Smoke in the Open Hazardous Material- Oil Pollution Hazardous Material- Vehicle Leaking Fuel Humanitarian or Assistance- Persons Locked Out, Swill Away, Advice Given and all other categories Rescue- Animal Small Rescue- Lift- Person Shut In

Appendix B

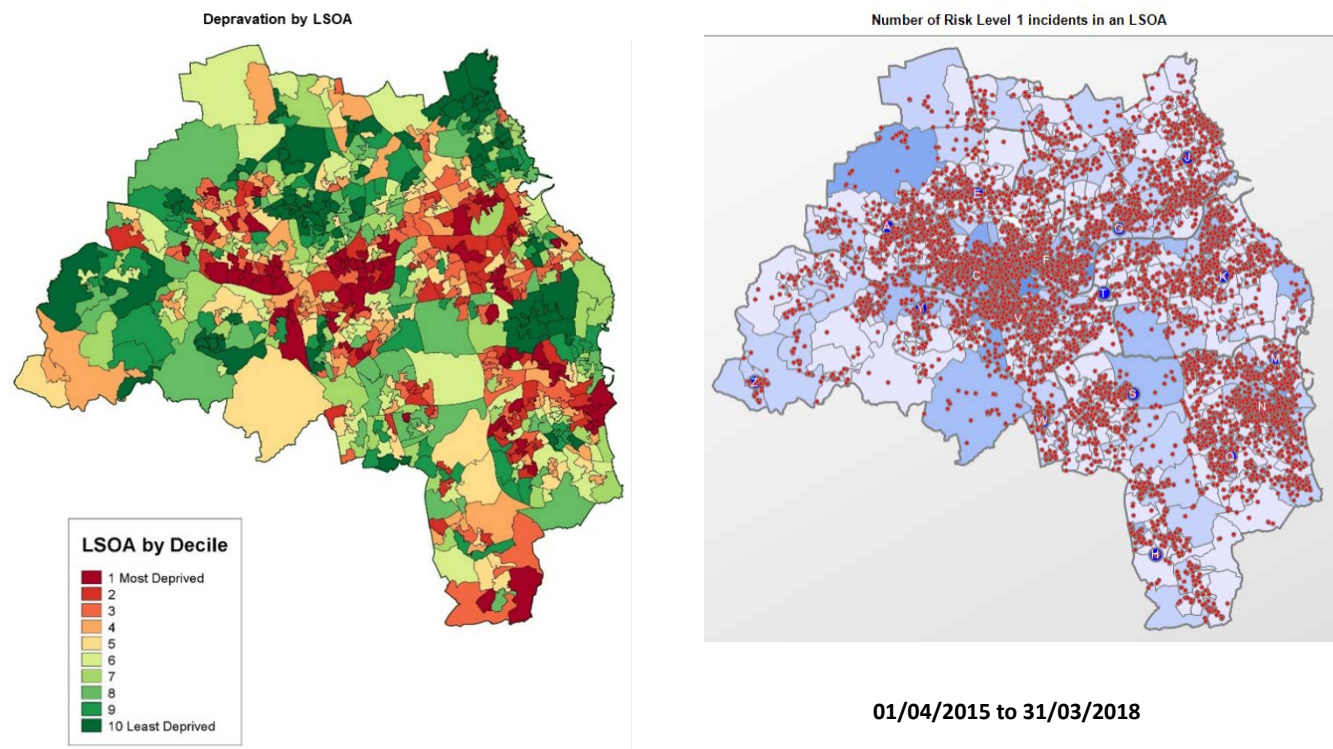


Figure B1 – Illustration of the relationship between deprivation and Risk Level 1 incident demand

- B1 Figure B1 above, illustrates the relationship between deprivation and demand. The correlation of this relationship is similar across all incident risk levels. Further detail regarding the relationship between deprivation and risk is available in the CRP.
- B2 The level of risk in Tyne and Wear means that the area still experiences greater incident demand than most parts of the country. This is despite excellent reductions in fires and other incidents attended over the last eight years resulting from our concentrated focus on domestic fire prevention and business fire safety. Figure B2 below, shows the current level of fires in Tyne and Wear, members will note the overall downward trend to this data.

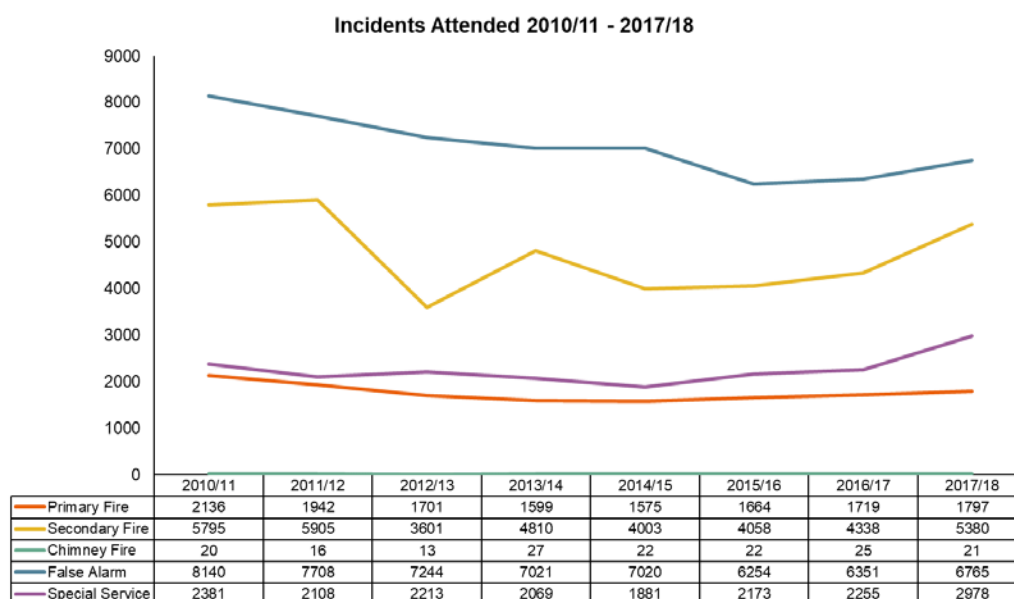


Figure B2 – Incident attended by type 2010/11 - 2017/18

- B3 In terms of deliberate fires, there is also a clear statistical correlation between incidence of these and deprivation. Reflected in the proportion of deliberate fires to all fires in Tyne and Wear in 2017-18⁷, we had the highest proportion of deliberate fires per 100,000 population in the country. Deliberate fires, often linked to anti-social behaviour (ASB), contribute to Northumbria Police having the sixth highest rate of reported ASB in the country.
- B4 Deliberate fires are classified in two ways, primary and secondary. Primary deliberate fires are those that involve people and/or property, secondary deliberate fires are those that do not involve people and/or property for example refuse fires. Both intentionally started to cause harm or damage.
- B5 Deliberate secondary fires were in steady decline between 2010/11 and 2016/17. Data for 2017/18 indicates a rise in incident rates in this low risk category. Analysis of that data indicates that the cause of that rise is due to a range of factors including the prevailing weather conditions. Noticeable spikes and decline in demand can be seen over the period 2011/12 to 2013/14, with 2012/13 being a particularly wet year.
- B6 Deliberate secondary fires (risk level four) make up the majority of all deliberate fires in Tyne and Wear and demonstrate a strong seasonal pattern, illustrated in Figure 5 below.

⁷ Statistical Bulletin 16/18 – Fire and Rescue Incident Statistics: England, Year ending March 2018, Home Office.

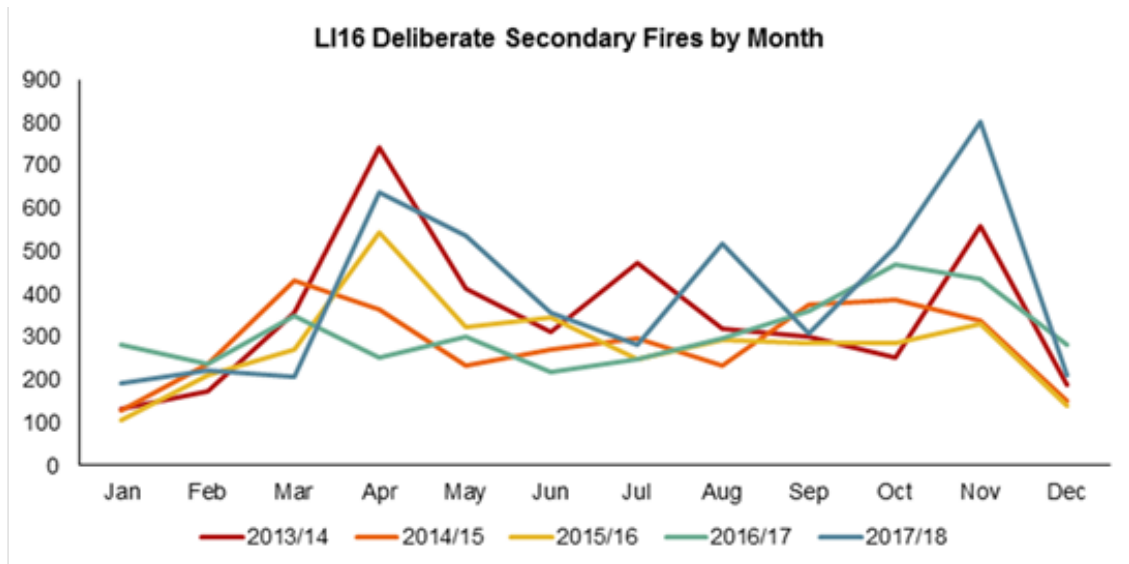


Figure B3 – Deliberate Secondary Fire by Month of the Year 2013/14 – 2017/18

- B7 Special service calls are those to request for emergency assistance that are non-fire related. Demand in terms of special services remained consistent over the period 2013/14 to 2016/17, rising to 2978 incidents in 2017/18 most due to an increase in requests to gain entry to premises for life saving purposes from our emergency services partners.

Appendix C - Incident Demand and Resource Allocation

- C1.1 The review used incident demand data from the last eight, five and three years to generate and test potential options for change. The total number of incidents per year has reduced from 18,472 to 16,941 (9.2%) over an eight year period, with special services and deliberate secondary fires being the major contributors to an in year rise from 14,688 to 16,941 during 2017/18.
- C1.2 It is clear that whilst overall TWFRS has a relatively high number of incidents, and some of our stations are amongst the busiest in England, there is wide variation in incident levels:
- Between geographical locations within Tyne and Wear
 - At different times of day
 - In terms of the magnitude of the incidents, and the risk to life and property they pose
- C1.3 Despite unprecedented and disproportionate budget cuts, we are still one of the fastest responding FRSs in England. The review group further examined our risk in the light of current funding challenges, whilst still seeking to minimise impact on community and firefighter risk. In line with earlier IRMP reviews, this examination was achieved through an increasing focus on the evidence base and looking for opportunities to improve flexibility.
- C1.4 The review group, in formulating options for consideration, looked at two potential scenarios. Firstly, whether it would be feasible to be more flexible in the use of existing resources by the introduction of a response model that better met risk and demand. Secondly, whether it would be feasible to reduce the overall resources available, whilst maintaining a tolerable level of speed and weight of response. In both scenarios, analysis targeted the highest risk and incident demand terms of geography and incident type.
- C1.5 The review group used analysis techniques including workload modelling, risk and task analysis to model a number of these options. Workload modelling provides an indication of how changes to the response strategy may affect actual response based upon analysis of previous incidents, whilst risk and task analysis give a prediction of the impact of such changes on life, property and firefighter risk.
- C1.6 As illustrated in *Figure B1*, the different communities in Tyne and Wear experience differing incident rates. The station nearest the city centres and more densely populated parts of Tyne and Wear experience significantly more incident activity at all risk levels. Some stations have relatively low levels of risk and demand.

- C1.7 Speed and weight of response is important in the successful management of any incident. This becomes more critical as the potential risk of that incident is higher e.g. Risk level one incidents generally require faster and greater weight of response than other risk levels, especially risk level four. The Authority supported the redesign of the operational response model during the last IRMP so it focuses on responding quickly to life risk, higher priority incidents and becoming slower to non-life risk, lower priority incidents. This strategy has been successful with Tyne and Wear recording the second fastest response times to dwelling fires of six minutes when compared to other fire and rescue services.⁸
- C1.8 Incident attendances, predetermined attendances (PDA) as they are known, are set using regular risk management and driven by the requirements of our standard operating procedures, community and firefighter safety. PDAs set the baseline for initial weight of response. Standard PDAs are built up using a minimum of two, three or four pumps, responding to higher risk fires. This provides a minimum of 8, 12 and 16 firefighters respectively along with associated equipment. Detailed analysis of response standards, speed and weight of response, was undertaken and this analysis indicates that these PDAs provide a speed and weight of response in excess of that contained in appropriate national operational guidance and recognised planning toolkits.
- C1.9 The change in response times when considered in terms of all risk levels has been in line with the redesigned response model. As *Figure C2* indicates, the average time from mobilising to attendance for risk level one incidents has reduced by only 12 secs since the start of the introduction of the redesigned model in 2014. Members will note that this strategy has increased the response time to other incident types, in particular to risk level four incidents, as proposed by that strategy.

Station	Duty System	Appliances	Risk Level 1	Risk Level 2	1 & 2 Total	Risk Level 3	Risk Level 4	3 & 4 Total	Grand Total
Newcastle Central (C)	WT	1 17 4 12	330	137	467	700	534	1234	1701
Byker (F)	WT	1 2 9 9	462	179	641	546	411	958	1601
Gateshead (V)	WT	1 2 3 5	333	119	452	394	538	932	1311
Sunderland Central (N)	WT	1 17	238	104	342	418	429	847	1201
South Shields (K)	WT	1 2	224	101	325	326	426	751	1082
West Denton (A)	WT	1 7	199	111	310	296	491	787	1081
Gosforth (E)	WT	1 2 3	239	103	342	415	321	736	1044
Marley Park (M)	WT	1 3	177	87	264	290	382	672	924
Tynemouth (J)	WT	1 2 8	215	82	297	286	296	582	817
Washington (S)	WT	1 2 17 17	126	72	198	166	355	521	741
Farringdon (Q)	WT	1 2 10	143	66	209	229	303	532	730
Hebburn (T)	WT	1 6	145	75	220	204	281	484	727
Swalwell (Y)	WT	1 16	165	59	224	195	223	419	645
Wallsend (G)	WT	1	140	50	190	161	226	388	567
Rainton Bridge (H)	DC(CC)	1	97	52	149	131	232	363	510
Birtley (W)	DC(CC)	1 14	80	34	114	112	145	257	376
Chopwell (Z)	OC	2 17	18	4	22	13	27	40	55
1 2 Fire Appliance Cat01/02		17 Targeted Response Vehicle				0 Special Appliance			

Figure C1 – Average number of Incidents by Station and Risk Level 2013/14 to 2017/18

⁸ See Appendix E

Fiscal	Risk Level 1	Risk Level 2	Risk Level 3	Risk Level 4
2010/11	00:05:02	00:05:00	00:04:55	00:05:24
2011/12	00:04:50	00:04:49	00:04:45	00:05:20
2012/13	00:04:58	00:05:11	00:04:48	00:05:19
2013/14	00:05:05	00:05:05	00:04:58	00:05:33
2014/15	00:05:00	00:05:13	00:05:01	00:05:36
2015/16	00:05:04	00:05:47	00:05:12	00:07:03
2016/17	00:05:08	00:05:48	00:05:21	00:07:43
2017/18	00:05:12	00:05:39	00:05:23	00:07:27

Figure C2 – Av. Response Times by Risk Level 2010/11 to 2017/18

C1.10 Another important feature of incident demand is the distribution of calls across a 24-hour period (daily demand).

C1.11 Figure C3 illustrates the daily demand for all incidents in Tyne and Wear over the period 2013/14 to 2017/18. This pattern is consistent throughout the year with only minor seasonal variations in this pattern. Daily demand builds from around 10:00hrs to a peak at approx. 19:00hrs and declining throughout the night to its lowest levels at approx. 06:00hrs.

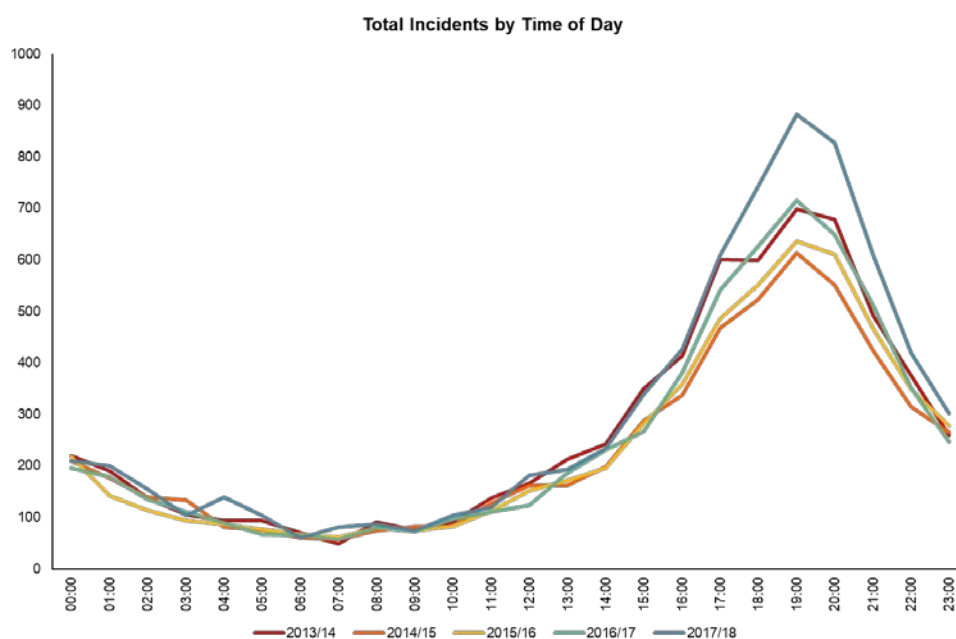


Figure C3 – Daily Demand 2013/14 to 2017/18

C1.12 The current whole time shift pattern follows eight-day cycle incorporating two day shifts 09:00-18:00 (Nine hours), two night shifts working 18:00-09:00 (15 hours) and then four rota days (off duty). On a rotational basis employees work two extended day shifts of 09:00-00:00 (15 hours) allowing for two appliances to be removed from the response model between 00:00-09:00, see *Figure C4* below.

C1.13 Day-Crewing (Close Call) employees at two stations work an 11-hour day shift, followed by 13 hours close call (standby hours) from accommodation provided at the station.

C1.14 Chopwell community fire station is on call only, with availability provided by on-call employees.

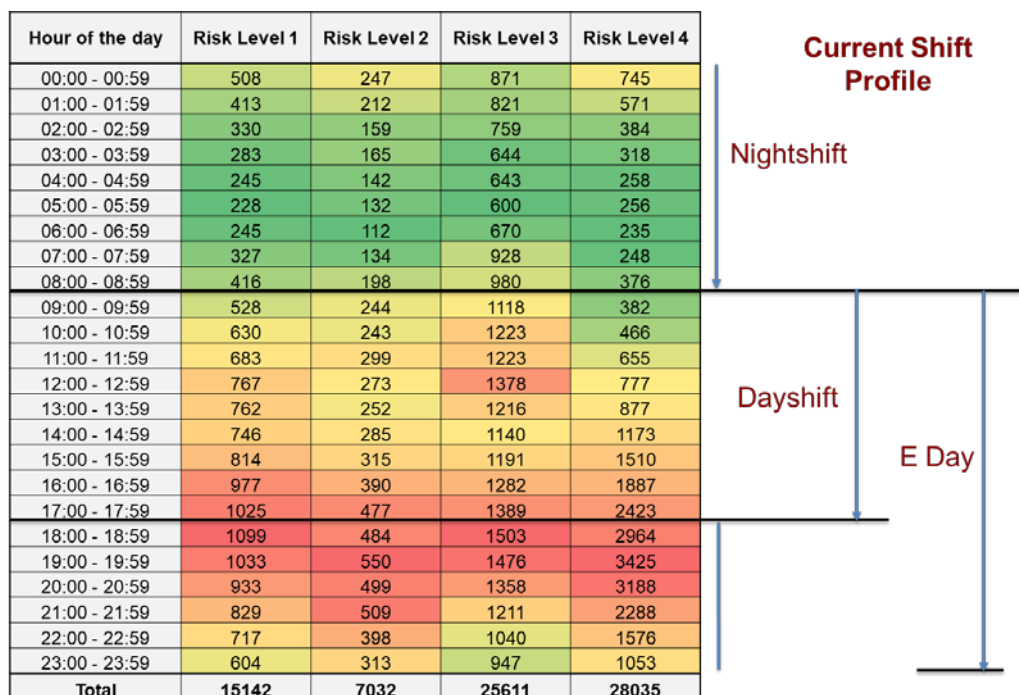
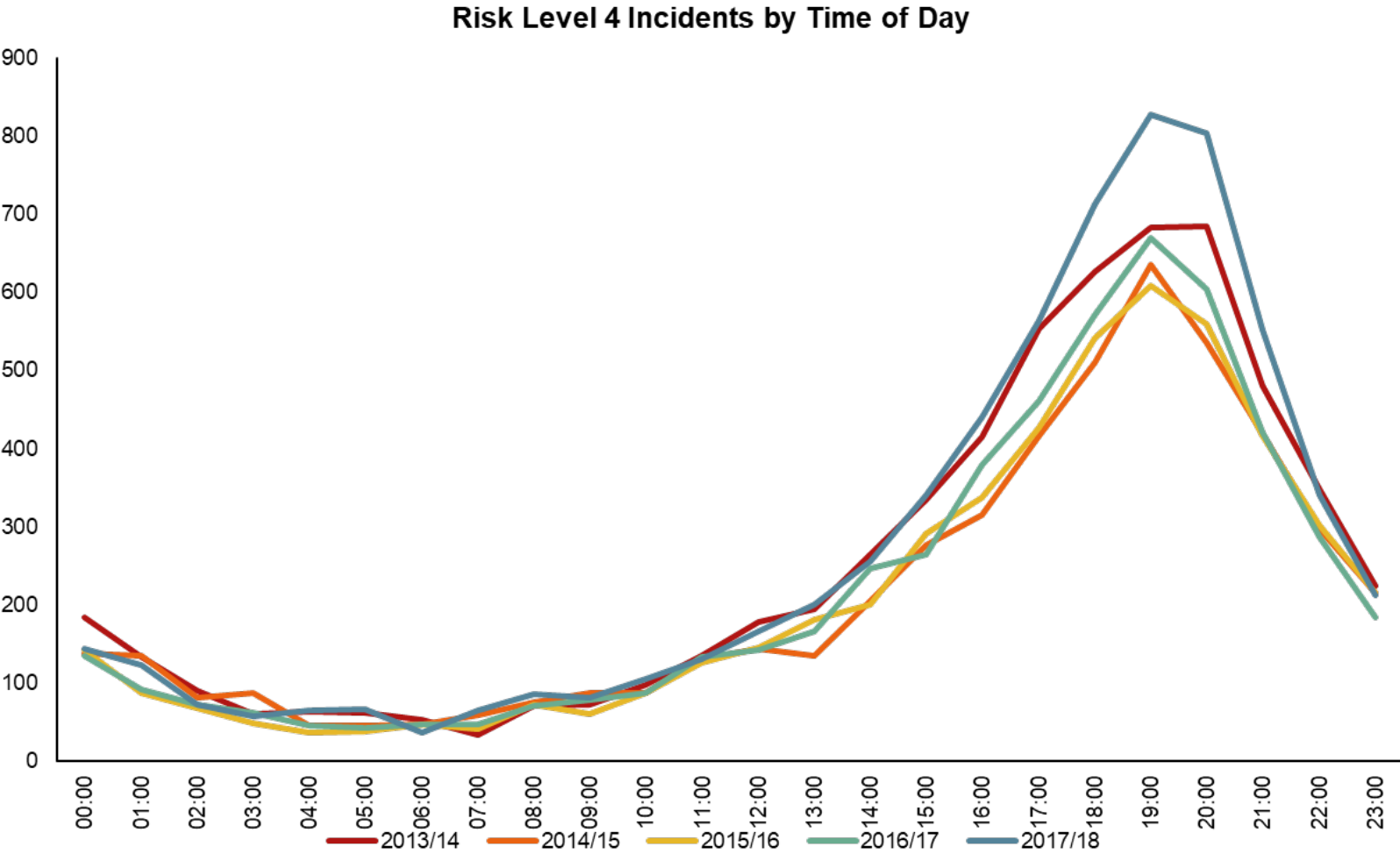


Figure C4 – Average Incident Occurrences by Hour of Day and Current Whole time Shift Pattern (based on 5-year Data)

Appendix D



Appendix E

