

**Emergency Response Performance Reporting:  
'Using actionable data to enable continuous improvement'**

**1. Introduction**

The purpose of this report is to review how we currently measure and report our speed of response to emergency incidents. In particular, it will consider how performance is reported to the Fire Authority, the general public and whether this form of reporting is sufficiently visible, transparent and comprehensible. The review will also consider how the data generated can be used by Service Managers to enable continuous improvement.

It is not the purpose of this report to review standards of fire cover or how we distribute resources. These are currently determined by our 2015 – 2020 Public Safety Plan (PSP) and will be considered within the scope of the work to develop the next PSP which will cover the period 2020 – 2025.

An overview of how response standards and associated performance reporting evolved is contained in Appendix 2. A review of how other fire authorities report was also undertaken and a summary of the findings from this set out at Section 5.1 below.

The report also provides recommendations for the future measurement and reporting of speed of response to emergency incidents.

**2. Executive Summary**

The way that response to incidents has been reported has changed since the inception of the Service on 1<sup>st</sup> April 1948 when the then Buckinghamshire Fire Brigade was formed following the dissolution of the wartime National Fire Service. Until the introduction of Integrated Risk Management Planning (IRMP), Fire and Rescue Service (FRS) response standards were set nationally by the original 'Standards of Fire Cover' (see Appendix 2 for further details). These were still in place when Buckinghamshire and Milton Keynes Fire Authority was formed in 1997 and right up until the reversion to locally determined standards began with advent of IRMP from 2004. IRMP requires services to decide their own response strategy and standards of fire cover.

Buckinghamshire Fire & Rescue Service's current standards of emergency response to incidents are:

- Achieve attendance with the first operational resource for all emergency incidents within 10 minutes on 80 per cent of occasions, and 99 per cent of all emergency incidents within 20 minutes; and,
- All pumping appliances required as part of the predetermined attendance to arrive within 20 minutes on 90 per cent of occasions.

Among the factors that have affected recent performance trends are:

1. Use of Automatic Vehicle Location Systems (AVLS);
2. Nearest appliance mobilisation via the new Thames Valley Fire Control Service (TVFCS) mobilisation system; and,
3. Changes to resource allocation as a result of our new resourcing strategy and model.

**Overall Recommendation:**

It is recommended that the way BFRS' emergency response performance is reported be changed by moving away from using targets based on the percentage of occasions on which a particular attendance time is achieved (although the capability to do this will be retained) towards provision of more actionable data that can be used to help identify opportunities to improve performance by breaking down and analysing the component parts of the emergency response process and longer term trends in relation to these. This will provide information that Officers can use to improve performance and better enable Authority Members to fulfil their role of providing scrutiny and challenge and that the general public can see as being open and transparent. Further details of the proposed performance reporting methodology are set out at Appendix 3.

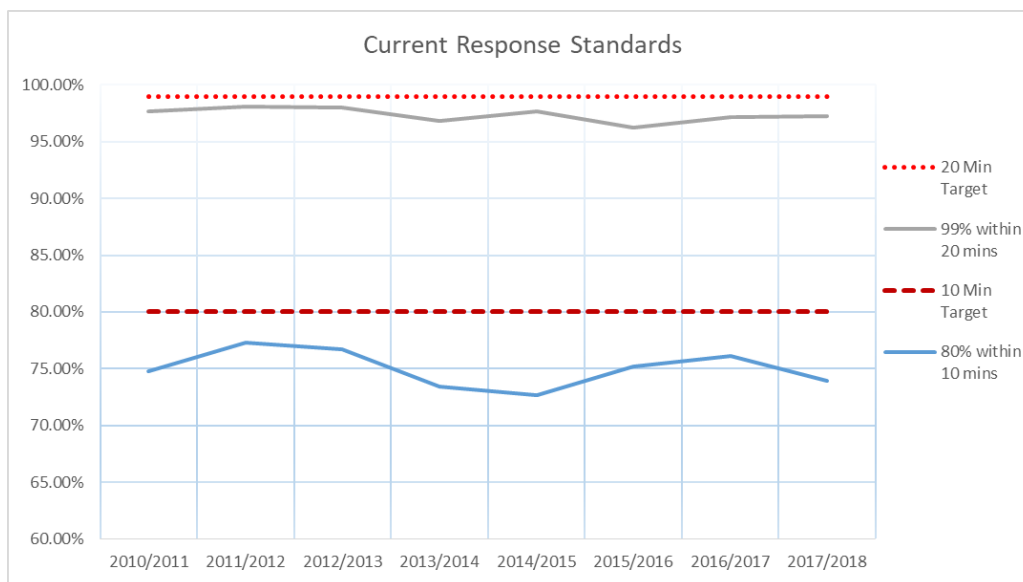
**3. Current Performance Trends**

Actual performance against current response standards over the last eight years is shown below.

**Average First Assigned To First Arrived**

Latest Figures for our current methodology

	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Grand Total
99% within 20 mins	97.65%	98.12%	98.04%	96.86%	97.71%	96.24%	97.15%	97.26%	97.35%
80% within 10 mins	74.80%	77.26%	76.72%	73.42%	72.68%	75.22%	76.12%	73.95%	75.05%



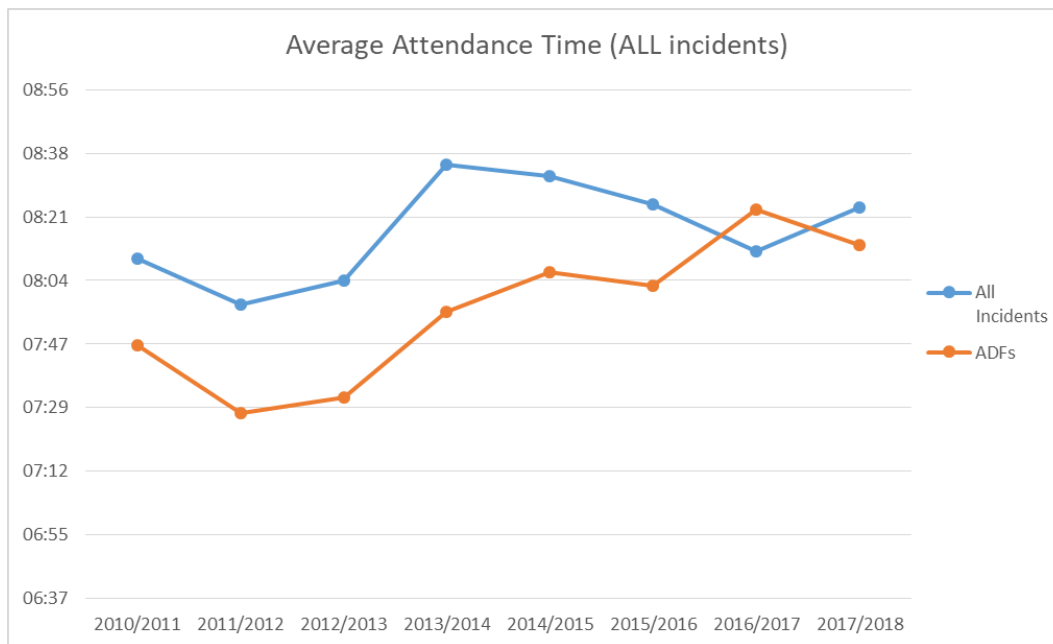
Over the last three years the Service has moved to reporting performance within the framework the current 2015-2020 PSP using longer term performance trends for most performance indicators rather than annualised targets.

This way of reporting which was undertaken within the context of a 'balanced scorecard' structure aimed to show performance holistically and over longer periods of time to establish trends.

The response to incidents was reported using the average attendance time for emergency incidents across the whole Service area. This excluded co-responding incidents which are subject to South Central Ambulance Service performance criteria.

Average Attendance Time (without any caveats / exclusions)

	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	Grand Total
All Incidents	08:10	07:57	08:04	08:35	08:32	08:24	08:12	08:24	08:17
ADFs	07:46	07:28	07:32	07:55	08:06	08:02	08:23	08:13	07:55



As can be seen from the graph above the average attendance time to all emergency incidents was on a reducing trend over the period 2013/14 – 2016/17 whilst the trend for response times for accidental dwelling fires (ADFs) rose over the same period. However, in the last year (2017/18) the trend for each of these indicators reversed with a marked improvement in relation to ADFs.

Among the factors influencing these trends are:

1. Use of Automatic Vehicle Location Systems (AVLS);
2. Nearest appliance mobilisation via the new Thames Valley Fire Control Service (TVFCS) mobilisation system; and,
3. Changes to resource allocation as a result of our new resourcing strategy and model.

#### **4. Future demand/risk/pressures**

A full analysis of the likely pressures on the Service, with the implications for emergency response and wider community risk management, will be undertaken as part of the production of the 2020-2025 PSP. However, it is worth identifying some of the broader factors now in order to inform decisions around the reporting of response to incidents.

### **4.1 Demand**

Over the next five to 30 years the area is likely to go through a period of significant increase to its population and associated built and infrastructural environments as a result of factors such as the following:

- The new Cambridge – Milton Keynes – Oxford economic corridor;
- Continued growth to Aylesbury underpinned by its 'Garden Town' status;
- The expansion of Princes Risborough (expected to double in size).
- The potential establishment of a new Garden Towns.

While we have learned over recent years that population increase doesn't necessarily lead to a proportionate increase in incidents, its scale is likely to lead to an increase in the overall volume of incidents even if they continue to fall on a per capita basis. Another consequential risk factor is the increased number of vehicles on our roads and the potential for road traffic incidents. Also, in the longer term we may experience an increasing impact on attendance times from road traffic congestion.

### **4.2 Risk**

There is also likely to be a change to the profile of risk in the community due to the ageing and diversification of the population. Statistics show a direct correlation between age and the likelihood of a fire resulting in a serious injury or fatality. This is particularly so among those aged over 80.

A number of major engineering and infrastructure projects such as High Speed 2 rail (HS2), the third runway at Heathrow, East - West rail and the East - West Express Way (the latter two are associated with the planned new Cambridge-Milton Keynes- Oxford economic corridor) will also impact on the area risk profile particularly during the construction phase.

HS2 is unprecedented engineering project (including a 16 mile tunnel under the Chiltern Area of Outstanding Natural Beauty) and has the potential to present BFRS with new and significant operational challenges. This will include disruption to the local road network for years to come.

These factors mean that we need to ensure we are reporting our response to incidents in a way that shows their effects.

## **5. Options and recommendations for measurement and reporting of response times.**

### **5.1 Other Services response standards.**

As part of developing this report, the methods for reporting response in 19 other FRS were reviewed. What is apparent is the very diverse range of reporting methods in use. For example, many FRS still report against targets while others use a degree of performance reporting based on risk.

In particular we looked at our Thames Valley partners and also surrounding Services. We also looked at those in our National Fire Chiefs Council (NFCC) 'family group' (Services of similar size and geo-demographic profile).

The finding of this review indicate that most Services seem to base their response standards on what they can achieve (similar to what we did in the targets we set in 2009 and then looked to stretch in 2012/13).

### **5.2 Options for measuring response performance.**

Two determinants for how we measure our response performance are proposed:

1. Public confidence in the service we provide. Our response should be expeditious, professional and safe; and,
2. The effectiveness of our response should be measureable.

In relation to item 1, we know from the After Incident Survey that public satisfaction with our speed of response is high, although relative to other aspects of service performance is one of greatest causes of dissatisfaction:

However, it leads to relatively few formal complaints with only two over the last two years, only one of which was upheld.

In relation to the second determinant, we can capture data on call handling time, time of crew to mobilise, travelling time and time to deal with an incident (time of stop or time incident closed).

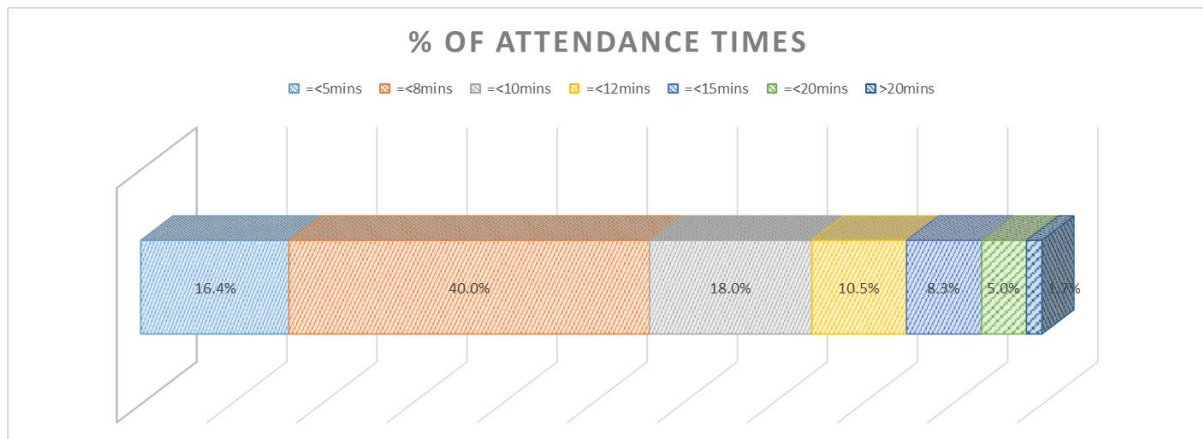
However, we have learned that reporting response in terms of percentages against a target time does not necessarily provide a true picture of the Service's performance because of the aggregating effect of using percentages.

The reporting methodology could be improved by continuing to use average attendance times but using all incidents as a base as shown in the graph at page 6 above (which could also include the median as well as the arithmetic mean) supported by showing average times of the following components:

1. Call handling time (i.e. performance measurement of TVFCS);
2. Time to mobilise (demonstrating the performance of our crews in responding to a call to an incident); and,
3. Travel time (monitoring the impact of changes to our road infrastructure, traffic, weather etc.).

Furthermore, response times can be reported in the form of a distribution along a timeline as illustrated overleaf. This would then demonstrate a spread of typical response times for either all, or specific types of incidents (RTCs, dwelling fires, life risk calls etc.). This would also allow further analysis and scrutiny of outliers based on factors such as incident type and geography.

It would also be possible to report by mapping the geographic locations of incidents which would fall outside of the normal expected attendance times which could allow greater scrutiny and challenge in respect of risk against demand.



However, the effectiveness of our response is not easily quantifiable due to the multitude of parameters. There are some tools within the way we capture incident data that could be utilised. These are factors such as the size of the fire, the amount of damage and confinement to compartment of origin. This last measure is, however, problematical due to changes in the way people live, work and building design.

Nonetheless, we are looking at how the estimation of compartment size and fire damage can be more accurately measured. This could lead to a better understanding of the relationship between building type, occupants, location and the speed of response. Currently, we cannot make recommendations on reliable performance indicators but will look to develop this using technology.

### **5.3 Summary of Recommendations**

A draft of the reporting framework that is proposed for future use is shown at Appendix 3.

#### What we propose to measure:

- Emergency Response subject to the following exclusions:
  - Remove outliers: <1 min, > 45mins for travel time;
  - Remove outliers: <20seconds, >15mins for call handling;
  - Exclude Officer Only Incidents;
  - Exclude Co-Responder Incidents;
  - Exclude Animal Rescue Incidents;
  - Exclude incidents which were revised as: False alarm – Location not found;
  - Exclude incidents with no travel time data.
  
- Emergency Response subject to the following exclusions once the data is available to us (historic benchmarking will not be available):
  - Exclude any incident where attendance was not made under blue light;
  - Exclude any incident where there was a substantial delay in attendance due to lack of address details or incorrect location.
  
- Call handling time (performance measurement of TVFCS since inception in April 2015);

- Time to mobilise (demonstrating the performance of our crews in responding to a call to an incident); and,
- Travel time (monitoring the impact of changes to our road infrastructure, traffic, weather etc.).

### How we propose to display it:

- In the form of distribution of incidents along a time line showing mean and median times of response as illustrated as illustrated in the draft reporting framework at Appendix 3;
- Times for call handling, turnout and travel displayed as averages, year on year to show trends;
- Overall response time displayed as an average, year on year to show trends;
- Map of attendance times showing geographical spread of attendance and statistical outliers.

### When we propose to report:

- We currently report real time performance on response to crews at station through their performance reporting screens. We propose that this is maintained as it has driven some improvements;
- We propose that the overall average attendance time is reported as part of the balanced scorecard;
- We propose to report half yearly to Performance Management Board, Senior Management Board and the Overview and Audit Committee on all response performance measures as set out at Appendix 3;
- We propose that as part of the annual report, which is put in the public domain, that all response performance measures are published on a performance dashboard for public access on our website. This would also include the map of response times.