6 July 2017

(1) MEMBERS OF THE AVON FIRE AUTHORITY

Councillors Barrett (N), Davis (Chair), Dudd, Lake, Phipps, Shelford and Windows

(2) STANDING INVITEES

FBU – Gary Spindler
UNISON – Susan Halliday
UNITE - Tony Venn

(3) APPROPRIATE OFFICERS

(3) PRESS AND PUBLIC

Dear Member

You are invited to attend a meeting of the Performance Review and Scrutiny Committee to be held on Friday 14 July 2017 commencing at 10.30am. The meeting will be held in the Main Conference Room, Avon Fire and Rescue Service HQ, Temple Back, Bristol.

The Agenda is set out overleaf.

Yours sincerely

Guy Goodman
Clerk to the Fire Authority
Notes

Attendance Register: Members should sign the Register which will be circulated at the meeting.

Code of Conduct – Declaration of Interests: any Member in attendance who has a personal interest in any matter to be considered at this meeting must disclose the existence and nature of that interest at the commencement of that consideration, or when the interest becomes apparent. A Member having a prejudicial interest must withdraw from the meeting room whilst the matter is considered.

Emergency Evacuation Procedure:

- The fire alarm or notification of any other threat is a continuous siren.
- In such cases Members must leave the building by the nearest exit.
- In the event of explosion or smoke where controlled evacuation is not possible, Members must follow fire exit signs.
- All corridors are lit with emergency lighting.
- The assembly point is situated in the rear yard.

Exempt Items: Members are reminded that any Exempt reports as circulated with the agenda for this meeting contain exempt information and should therefore be treated accordingly. They should not be disclosed or passed on to any other person(s). Members are also reminded of the need to dispose of such reports carefully and are therefore invited to return them to the Clerk at the conclusion of the meeting for disposal.

Inspection of Papers: any person wishing to inspect Minutes, reports, or a list of the background papers relating to any item on this Agenda should contact Kathlin Baty on 0117 926 2061 ext. 231 or by visiting Avon Fire & Rescue Headquarters, Temple Back, Bristol (during normal office hours).

Public Access: under Standing Order 21 and providing 2 clear working days’ notice has been given to the Clerk (the.clerk@avonfire.gov.uk) any resident or representative of a business or voluntary organisation operating in Bristol, South Gloucestershire, Bath and North East Somerset or North Somerset Council may address the Fire Authority or one of its Committees (for no more than 5 minutes) to present a petition, make a statement, or as leader of a deputation. This is a time limit of 30 minutes for Public Access.

Reports: reports are identified by the relevant agenda item number.

Substitutes (for Committees only): notification of substitutes should have been received from Group Leaders by the Clerk prior to the meeting.
AGENDA

1. Apologies for Absence
2. Emergency Evacuation Procedures
3. Declaration of Interests
4. Chair’s Business
5. Minutes of the Committee Meeting held on 20 January 2017
6. Public Access
7. Performance Report
8. Community Safety - Case Study
9. Turntable Ladders
11. Date of Next Meeting – Friday 10 November 2017 (10.30am)
26. APOLLOIES FOR ABSENCE
   Apologies were received from Councillor Windows.

27. EMERGENCY EVACUATION PROCEDURES – The Chair drew attention to the emergency evacuation procedures as set out in the Agenda.

28. DECLARATION OF INTERESTS – The Chair drew attention to the requirements of the Code of Conduct as set out in the Agenda.

29. CHAIR’S BUSINESS – None.

30. MINUTES OF THE COMMITTEE MEETING HELD ON 21 October 2016
   RESOLVED that the minutes be approved as a true record and signed by the Chair.

31. PUBLIC ACCESS – None.

32. PERFORMANCE REPORT
   The Committee received a report informing Members on the organisation’s performance against targets for the first eight months of financial year 2016/17.

   The Corporate Assurance Manager provided an overview of the report and the progress being made to reach the targets set. Members considered the report and reviewed the Scorecard, and requested some more detail around response times to 999 calls and sickness in terms of days lost through ill-health.

   The Committee requested that a key be provided to advise what the indicators were referring to within the report.

   RESOLVED to note the report.

33. HEALTH and SAFETY REPORTS
   The Committee received an update from the Health and Safety Manager on the Health and Safety Annual Performance 2015/16 and Vehicle Incident
Trends and were informed that the report has been presented to the Service Management Board (SMB) and the Health and Safety Committee.

The Committee were also advised that the Fire Authority were signing up to the Mind/Blue Light Campaign on 26 February.

The Committee also received an update from the Health and Safety Manager on Vehicle Incident Trends which led to some discussion around parking and ease of access for appliances and it was mentioned that a debate is ongoing within the City Hall around parking bylaws.

The Committee were informed that cars in areas where access is obstructed are leafleted. Appliances also use extendible hoses if they are prevented from getting close to an incident due to parking issues although immediate proximity to the incident is more desirable. Parking and issues around access will always be current.

An issue was raised around new Fire Stations not having ventilation for exhaust fumes in their appliance bays. The H&S Manager advised that monitoring reports undertaken indicate such ventilation is not necessary. The Acting Property Services Manager commented that the issue will be kept under review.

The Committee congratulated the Health and Safety Manager and staff for their hard work and excellent reports.

**RESOLVED** that:

1. A cost benefit analysis to be undertaken with respect to employing directly specialists such as a physiotherapist, sports health therapist and/or a mental health worker to include all relevant statistics with the outcomes presented to a future meeting of the Committee.
2. A briefing on the Blue-Light Mind Campaign to be circulated to all Members.
3. The emissions monitoring reports for to be circulated to the Committee.

34. **COMMUNITY SAFETY – Case Studies**

The Assistant Chief Fire Officer (ACFO) presented two Community Safety Case Studies

**RESOLVED** to congratulate the staff involved for their hard work and engagement with other agencies in community safety and the referral process.

35. **ENERGY and ENVIRONMENTAL PERFORMANCE**

The Committee received a report from the Acting Property Services Manager on the Energy and Environment performance indicators as at the end November 2016 Energy consumption and the carbon emissions continue to fall year on year. We are ahead of our target.
Water consumption has increased year on year by 13% but work is ongoing with Wessex Water on addressing such issues as leaks. The Committee were also informed that water for training is currently free of charge although it was acknowledged that such water should not be wasted. Consideration is being given to monitoring such consumption in the future given that the water market is to be deregulated which may impact on this free provision.

**RESOLVED** that a report be presented to a future meeting of the Committee reviewing possible alternatives to the diesel fleet and the increased use of renewals.

36. **DATE OF NEXT MEETING – Friday 7 April 2017 (10.30am)**

The meeting closed at 12.50hrs

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Chair
1. **SUMMARY**

The purpose of this report is to inform the Committee of the performance of the organisation against targets and indicators for the period April to May 2017 and also to present to the Committee the Performance Report for 2016/17.

2. **RECOMMENDATIONS**

The Committee is asked to note report.

3. **BACKGROUND**

3.1. The intention of this report is to provide the Committee with a regular update on the work being undertaken to manage the Services:

   - Performance
   - Corporate risks
   - Community risks.

3.2. Members are reminded that the scorecard (see Appendix 1) looks at monthly performance progress and also compares annual targets, year to date targets, positive or negative progress and comparisons to national benchmarking data. Green indicates monthly progress, on or exceeded targets, amber indicates ‘just off target’ and red indicates ‘not achieving target’.

3.3. The following summary provides an indication of progress against targets for the first two months (April – May) of financial year 2017/18.

3.4. **Fires** – all four fire indicators are off target. However, as the scorecard is only looking at the first two months of the new financial year there is a risk in over-
reacting. The organisation will continue to monitor the performance and implement interventions to mitigate risk where necessary.

3.5. **Alarms** - the number of attendances to Automatic Fire Alarms (AFAs) in non-domestic premises is on target. 18% (9 out of 41 incidents) of Malicious False Alarms were successfully “call challenged”, meeting the 5% target.

3.6. **Deaths and injuries** - tragically two fire fatalities have been recorded in April. Nine injuries in fire (where hospital treatment was required) have been recorded.

3.7. **Response** - all of the response indicators have met target. The handling of 999 calls (LPIR9) continues to be good with 95.4% answered within the seven second target.

3.8. **Gaining entry pilot** - since 5 September 2016 AF&RS have participated in a scheme assisting the South West Ambulance Service Trust in gaining entry to people who require assistance but cannot be accessed by Ambulance staff. From that date to 30 June 2017 the number of calls for assistance are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
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<tbody>
<tr>
<td>Calls received:</td>
<td>618</td>
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<tr>
<td>No attendance required:</td>
<td>22</td>
</tr>
<tr>
<td>Stood down before attendance:</td>
<td>99</td>
</tr>
<tr>
<td>Repeat call:</td>
<td>1</td>
</tr>
<tr>
<td>Calls attended:</td>
<td>496</td>
</tr>
<tr>
<td>No risk upon attendance:</td>
<td>15</td>
</tr>
<tr>
<td>Assistance provided:</td>
<td>481</td>
</tr>
</tbody>
</table>

There are many examples of positive outcomes from this scheme and some examples are provided below:

1. **Incident 021625-02032017 02 March 2017 00:43:00**

   Retained Duty System appliance from 08 Pill attended. One adult observed inside the locked property on the floor. Whilst waiting for the Ambulance service to attend the Fire Crew gained access through a window and administered oxygen and first aid to the victim who had been on the floor for three hours.

2. **Incident 022983-23032017 23 March 2017 17:42:48**

   Appliance from 18 Weston-Super-Mare attended. Access gained through downstairs window to allow ambulance service to treat a 64 year old male who had fallen.
3.9. **Call handling** - 3,670 calls for emergency assistance have been received and 2,177 (59.3%) were attended under emergency conditions.

3.10. **People** - both sickness indicators are off target mainly due to higher numbers of shifts/days lost to Long Term (over 28 day) sickness for uniformed staff. Return to work interviews completion is on target. Personal Development Reviews (PDRs) have been undertaken for 77% of staff (639 out of 830). The organisation’s target is to ensure that 95% of PDRs are completed within 12 months of the last PDR. All staff are undertaking a training programme in PDRs and it is expected that the completion rate will improve.


3.12. For incident data the organisation compares favourably for Accidental Dwelling, Deliberate Primary (excluding vehicle) and Deliberate Secondary fires but less favourably for Deliberate Vehicle fires and Attendance at Alarms. Performance for Attendance at Alarms is very much an outcome of the Fire Authority’s Attendance Policy.

3.13. Sickness benchmarking shows that though off target performance just above average compared to other Fire and Rescue Authorities.

3.14. Targets for 2017/18 – the Service Management Board have set the following targets:

- Incident data other than Deliberate Vehicle fires – to match the average outturn for the last six years
- Deliberate Vehicle fires – after a number of years of reduction numbers have increased over the last three years. Target is to achieve a 1% reduction compared to 2016/17
- Attendance Management – target is to match the national average outturn for FRAs and also to monitor against the national outturn for public sector
- Response, Health and Safety and Environmental targets form part of longer term strategies.

3.15. **Scorecard acronyms and terminology:**

- **Cat** Category defining population density
- **CFOA** Chief Fire Officers Association
- **FG4** Family Group of Fire & Rescue Services used for benchmarking
- **HFSV** Home Fire Safety Visit
LPI  Local Performance Indicator  
PDA  Pre-determined Attendance  
PDR  Personal Development Review  
Primary Fire  Fire incident affecting non derelict property  
Secondary Fire  All other fire incidents  
RTW  Return to Work  
SSC  Special Service Call (emergency non fire related incident)  
YTD  Year to date  

3.16. The Performance Report (see Appendix 2) is designed to inform the public and other stakeholders about how well the organisation performed over the last year in helping to build safer and stronger communities.

3.17. The Performance Report used to be known as the Best Value Report and was published as a statutory requirement. After the abolition of the Best Value legislation in April 2008 there is no longer a statutory requirement the continued publication of this information is felt to be important for openness and transparency. The Performance Report will be published on the website.

4. CONSIDERATIONS

4.1. Contribution to Key Policy Priorities

It is recognised that effective Performance Management and Corporate Risk Management are key to achieving all the objectives and targets of the organisation. In particular:

- The Fire Service National Framework
- Corporate Plan 2015/18
- Corporate Risk Register

4.2. Financial Implications

It is acknowledged that proficient, robust and effective performance and risk management will result in economic efficiencies and evidence of value for money.

4.3. Legal Implications

Mitigation under the Health and Safety at Work Act 1974

4.4. Equality & Diversity Implications
Equality impact assessments are carried out in all aspects of the organisation. These are monitored and reviewed as part of the performance management framework.

4.5. **Corporate Risk Assessment**

Providing evidence of outcomes in this area is a key control measure in reducing the Corporate Risks for the Fire Authority, in particular CR1 and CR15.

4.6. **Environmental/Sustainability Implications**

None

4.7. **Health & Safety Implications**

None

4.8. **Crime & Disorder Implications**

Targets and objectives are set to contribute to making improvement in this area. Progress and improvement is monitored closely at the Performance and Risk Management Forum.

5. **BACKGROUND PAPERS**

None

6. **APPENDICES**

1. Scorecard May 2017/18
2. Performance Report 2016/17

7. **REPORT CONTACT**

Simon Flood, Corporate Performance Manager, extension 358
### Scorecard 2017-18: YTD May 2017

#### Fires

<table>
<thead>
<tr>
<th>Measure</th>
<th>Annual Target 2017/18</th>
<th>YTD 2016/17</th>
<th>YTD Target</th>
<th>YTD Actual</th>
<th>Progress</th>
<th>% change compared to</th>
<th>Benchmarking Data $</th>
<th>Average</th>
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<th>Worst</th>
<th>Avon Actual</th>
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<tr>
<td>LPI142iiII</td>
<td>No. of calls to accidental fires in dwellings attended</td>
<td>6 yrs average</td>
<td>475</td>
<td>72</td>
<td>79</td>
<td>87</td>
<td>113</td>
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<td>57%</td>
<td>10.25</td>
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<tr>
<td>LPI120iiII</td>
<td>No. of deliberate primary fires (excluding deliberate primary fires in vehicles)</td>
<td>6 yrs average</td>
<td>243</td>
<td>42</td>
<td>41</td>
<td>45</td>
<td>47</td>
<td>↑</td>
<td>12%</td>
<td>2.09</td>
<td>1.12</td>
</tr>
<tr>
<td>LPI120vIII</td>
<td>No. of deliberate fires in vehicles</td>
<td>6 yrs average</td>
<td>351</td>
<td>75</td>
<td>59</td>
<td>64</td>
<td>72</td>
<td>↑</td>
<td>14%</td>
<td>2.30</td>
<td>1.15</td>
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<tr>
<td>LPI120iiiII</td>
<td>No. of deliberate secondary fires (excl. deliberate secondary fires in vehicles)</td>
<td>6 yrs average</td>
<td>1099</td>
<td>195</td>
<td>256</td>
<td>282</td>
<td>318</td>
<td>≈</td>
<td>63%</td>
<td>11.38</td>
<td>3.18</td>
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<tr>
<td>LPI NFF</td>
<td>% of accidental fires in dwellings where no firefighting action</td>
<td>Monitor only - last year 36%</td>
<td>34.5% (39/113)</td>
<td>≈</td>
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#### Alarms

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<tr>
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<th>YTD 2016/17</th>
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<th>Worst</th>
<th>Avon Actual</th>
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<tbody>
<tr>
<td>LPI FAMsI</td>
<td>Total No. of malicious false alarms</td>
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<tr>
<td>LPI FAMsII</td>
<td>% of malicious false alarms not attended</td>
<td></td>
<td>5%</td>
<td>n/a</td>
<td>n/a</td>
<td>5%</td>
<td>2%</td>
<td>18%</td>
<td>↓</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>LPI 149I</td>
<td>No. of calls caused by automatic fire detection attended</td>
<td></td>
<td>2147</td>
<td>309</td>
<td>358</td>
<td>394</td>
<td>365</td>
<td>≈</td>
<td>5%</td>
<td>44.46</td>
<td>3.63</td>
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#### Deaths, Injuries & Escapes

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<thead>
<tr>
<th>Measure</th>
<th>Annual Target 2017/18</th>
<th>YTD 2016/17</th>
<th>YTD Target</th>
<th>YTD Actual</th>
<th>Progress</th>
<th>% change compared to</th>
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<th>Worst</th>
<th>Avon Actual</th>
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<tbody>
<tr>
<td>LPI NFF</td>
<td>% of accidental fires in dwellings where no smoke alarm was fitted</td>
<td></td>
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#### Response

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<th>Measure</th>
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<th>YTD 2016/17</th>
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<tbody>
<tr>
<td>LPI RS1</td>
<td>Initial call fire in Building Cat.1: First Appliance in 8mins</td>
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<td>LPI RS2</td>
<td>Initial call fire in Building Cat.2: First Appliance in 10mins</td>
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<td>LPI RS3</td>
<td>Initial call fire in Building Cat.3: First Appliance in 15mins</td>
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<tr>
<td>LPI RS4</td>
<td>Full PDA mobilised to Initial call fire in Building</td>
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<td>LPI RS5</td>
<td>Initial call fire - all other: First attendance in 15mins</td>
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<td>LPI RS6</td>
<td>Life threatening SSCs: First attendance in 15mins</td>
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<tr>
<td>LPI R9</td>
<td>Calls for assistance to Service Control answered within seven seconds</td>
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#### Call Handling

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<th>Measure</th>
<th>Annual Target 2017/18</th>
<th>YTD 2016/17</th>
<th>YTD Target</th>
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<th>Progress</th>
<th>% change compared to</th>
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<th>Worst</th>
<th>Avon Actual</th>
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<tbody>
<tr>
<td>LPI 001</td>
<td>Number of 999 calls received</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td>LPI 002</td>
<td>Number of incidents attended as emergency</td>
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<td>LPI 003</td>
<td>% incidents attended as emergency/999 calls</td>
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#### Community Fire Safety Activity

<table>
<thead>
<tr>
<th>Measure</th>
<th>Annual Target 2017/18</th>
<th>YTD 2016/17</th>
<th>YTD Target</th>
<th>YTD Actual</th>
<th>Progress</th>
<th>% change compared to</th>
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<th>Average</th>
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<th>Worst</th>
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<tbody>
<tr>
<td>Monitor</td>
<td>No. of school visits conducted by station personnel</td>
<td></td>
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<tr>
<td>Monitor</td>
<td>No. of off-station community events attended to deliver fire safety message</td>
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<tr>
<td>Monitor</td>
<td>No. of on-station community events</td>
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<tr>
<td>Monitor</td>
<td>Total HFSV/Safe &amp; Well completed (this year)</td>
<td></td>
<td></td>
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#### Health and Safety - quarterly

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<tr>
<th>Measure</th>
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<th>YTD 2016/17</th>
<th>YTD Target</th>
<th>YTD Actual</th>
<th>Progress</th>
<th>% change compared to</th>
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<th>Worst</th>
<th>Avon Actual</th>
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<tbody>
<tr>
<td>H&amp;S 2</td>
<td>Vehicle incidents where hit fixed/stationary &amp; at fault</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>H&amp;S 1</td>
<td>Days/shifts lost to work related injury/sickness</td>
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#### Resources and Value for Money - quarterly

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<th>Measure</th>
<th>Annual Target 2017/18</th>
<th>YTD 2016/17</th>
<th>YTD Target</th>
<th>YTD Actual</th>
<th>Progress</th>
<th>% change compared to</th>
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<th>Average</th>
<th>Best</th>
<th>Worst</th>
<th>Avon Actual</th>
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<tbody>
<tr>
<td>LPI ET2</td>
<td>Energy consumption in kWh (compared to 2011/12 baseline)</td>
<td></td>
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<tr>
<td>LPI ET3</td>
<td>Carbon emissions (compared to 2015/16)</td>
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<tr>
<td>LPI ET5</td>
<td>Water consumption</td>
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<tr>
<td>LPI ET8</td>
<td>Renewable energy 20% by 2020 (5% in 2016/17)</td>
<td></td>
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</tr>
</tbody>
</table>

#### People - Reported Monthly

<table>
<thead>
<tr>
<th>Measure</th>
<th>Annual Target 2017/18</th>
<th>YTD 2016/17</th>
<th>YTD Target</th>
<th>YTD Actual</th>
<th>Progress</th>
<th>% change compared to</th>
<th>Benchmarking Data $</th>
<th>Average</th>
<th>Best</th>
<th>Worst</th>
<th>Avon Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPI 12I</td>
<td>Working days/shifts lost to sickness wholetime uniformed staff</td>
<td></td>
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<tr>
<td>LPI 12II</td>
<td>Working days/shifts lost to sickness all staff (excl. RDS)</td>
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<tr>
<td>LPI HR4</td>
<td>% of RTW interviews completed within 15 days</td>
<td></td>
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<tr>
<td>LPI HR5</td>
<td>PDR completion</td>
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</tbody>
</table>

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* indicative only as 4 IRS records are incomplete
$ source is either FG4 or CFOA
> not currently able to measure

Annual Target 17/18 = target set this year in % and/or number
YTD Target = target figure for this year to end of reporting month

Produced: 03/07/2017
Performance Report 2016/17
Measuring how we are doing
**Portuguese**
Se inglés não é sua primeira língua, e precisa de uma tradução, por favor contacte: Equalities Unit, Avon Fire & Rescue Service, Temple Back, Bristol, BS1 6EU.
Telefone: 0117 926 2061
E-mail: equalities@avonfire.gov.uk

**Bengali**
ইংরেজী যদি মাতৃভাষা না হয় এবং আপনার একটা অনুবাদ দরকার হয়, তবে লিখী করুন তখন আমরা তা করবেন. Equalities Unit, Avon Fire & Rescue Service (ইংরেজি যোগাযোগ ইনফরমেশন, এড্রেস ফাইনার এরা সিটিটি, ব্রিস্টল, BS1 6EU).
টেলিফন: 0117 926 2061 (০১১৭ ৯২৬ ২০৬১)
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**Kurdish**
نووژێکر دێژنێکر دی، زمانی کە کەمی توێیە و پێویستیت بە وەرگریان،
Equalities Unit, Avon Fire & Rescue Service, Temple Back, Bristol, BS1 6EU.
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**Gujarati**
જો ઇંગ્લીષ તમારી પ્રથમ ભાષા ન હોય અને તમે તમને ભાષાનું જરૂર હોય તો, કૃપા કરી સંપર્ક કરો: (એક આફિસ ખુલ્લું) Equalities Unit, Avon Fire & Rescue Service, Temple Back, Bristol, BS1 6EU.
ટ૆લિફોન: 0117 926 2061
ઇમેઇલ: equalities@avonfire.gov.uk

**Tagalog**
Kung hindi Iningles ang pangunahin mong wika at kailangan mo ng pasasaling-wika, mangyaring makipag-ugnayan sa: Equalities Unit, Avon Fire & Rescue Service, Temple Back, Bristol, BS1 6EU.
Telepono: 0117 926 2061
Email: equalities@avonfire.gov.uk

**Hindi**
अगर अंग्रेजी आपकी पहली भाषा नहीं है और आपके अनुवाद की आवश्यकता है तो कृपया इनसे संपर्क करें: Equalities Unit, Avon Fire & Rescue Service, Temple Back, Bristol, BS1 6EU.
टेलीफोन: 0117 926 2061 (0117 926 2061)
इमेयल: equalities@avonfire.gov.uk
**Introduction from Chief Fire Officer/Chief Executive**

Welcome to our Performance Report for 2016/17. This report tells you how well Avon Fire & Rescue Service (AF&RS) performed over the last year in helping to build safer and stronger communities.

AF&RS measures how well we are doing in three ways:
- Measuring interventions and outcomes;
- Monitoring compliments and complaints; and
- Measuring responses from customer surveys.

**Measuring interventions and outcomes**

AF&RS measures performance using a number of Local Performance Indicators (LPIs) that are designed to measure how effective we are at meeting our key purposes of Preventing, Protecting and Responding.

For each indicator we set a target and we measure our performance against that target – the results for 2016/17 are contained in this report.

**Compliments and complaints**

AF&RS monitors the compliments and complaints that are received and use this information to improve the service we provide. Details of the compliments and complaints can be found later in this report.

**Customer surveys**

A survey form is sent to victims of a domestic or non-domestic premises fire. The survey forms are returned directly to an independent research company. We use this service to gauge public satisfaction with our speed of response and performance at incidents.
How are we doing?

AF&RS continues to make good progress in reducing risk in our community by reducing the number and impact of incidents attended. We have met the reduction target that we set for four out of five of our incident indicators and are just off target for deliberate vehicle fires. Each incident that is prevented represents a reduction of risk in our community.

Furthermore, 40.1% of Accidental Dwelling Fires that we attended in 2016/17 required no firefighting action, a good measure of our success in prevention. This is an increase from the 39.9% recorded last year.

In 2016/17 we attended two fatalities in fires though one of these remains subject to the Coroner’s final ruling as to cause of death. Each fire fatality is a tragic event and we continue to strive towards zero fire deaths. Though the numbers are too small to measure any significance, this is the joint lowest yearly total we have on record.

AF&RS continues to provide an excellent response service to our community. We are pleased to report that all of our response standards have been met, ensuring that the vital first lifesaving response is in attendance within the time that we have said we will achieve. As part of our customer satisfaction surveys we ask people who have had a fire whether our response time was in line with their expectations. 97% of respondents reported that we are responding quicker than or in line with expectations.

We are also pleased to report that for people we responded to in an emergency 91% said that they were very satisfied with the service.

We also answered over 96.6% of 999 calls we received within our target time of seven seconds.

Checking our progress

Our website www.avonfire.gov.uk has information about our monthly progress in reducing the number of deliberate fires, accidental dwelling fires and hoax calls.

We also have monthly and annual data extracts of all the incidents we attend. These are in ‘comma separated value’ format and allow anyone to download and analyse our data.
Find out more about what we are doing to reduce risk and improve our service

AF&RS publishes an Integrated Risk Management Plan that details how we will reduce risk in our community. We also publish a Corporate Plan that details how we will improve the organisation of AF&RS to ensure that we make the best use of our resources and are best placed to help create a safer and stronger community.

These documents are also available from our website www.avonfire.gov.uk

I hope that you will find our performance report useful in keeping you informed about the service we provide.

Kevin Pearson
Chief Fire Officer/Chief Executive
Performance information

Performance indicators are grouped under eight headings:
- Preventing fires.
- Responding to unwanted fire signals.
- Deaths and injuries.
- Response.
- Calls received.
- Community Safety.
- Resources and value for money.
- Health and safety.
- People.

Under each heading there is a commentary about performance and a list of the indicators.

For each indicator there are details of:
- Our target for 2016/17.
- Our performance for 2016/17 (colour coded - green if the target has been met, amber if we are near to meeting target and red if we fell short of meeting the target).
Most incident indicators are shown as an actual figure and also divided by our population or number of buildings as appropriate. We do this so we can compare our performance against other fire and rescue services. The figures we have used for our calculations are provided to us by the Government. They are:

- Population: 1,118,807
- Dwellings: 465,483
- Non-domestic premises: 33,666

**Note:** Primary fire usually means a fire involving buildings or vehicles that are fit for use. A secondary fire usually means all other types of fire unless we attend with more than five fire pumping appliances. Fires attended by five or more pumping appliances are recorded as primary fires.
Preventing fire measures

AF&RS met three of the four preventing fire measure targets. Each reduction in incidents represents a reduction in risk to our community and our staff. We are just off target for deliberate vehicle fires. The percentage of accidental fires where we need to take no firefighting action continues to increase indicating improvement in our protection against fire.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>*LPI 142iii Number of accidental fires in dwellings per 10,000 dwellings</td>
<td>11.9 or 530 fires</td>
<td>9.6 or 449 fires</td>
</tr>
<tr>
<td>LPI 206i Number of deliberate primary fires (excluding vehicles) per 10,000 population</td>
<td>2.7 or 300 fires</td>
<td>2.2 or 245 fires</td>
</tr>
<tr>
<td>LPI 206veh Number of deliberate vehicle fires per 10,000 population</td>
<td>3.7 or 411 fires</td>
<td>3.9 or 432 fires</td>
</tr>
<tr>
<td>LPI 206iii Number of deliberate secondary fires (excluding vehicles) per 10,000 population</td>
<td>13.2 or 1,447 fires</td>
<td>8.3 or 930 fires</td>
</tr>
<tr>
<td>LPI NFF Percentage of accidental dwelling fires attended where no fire and rescue service firefighting action is required</td>
<td>Monitor only</td>
<td>40.1%</td>
</tr>
</tbody>
</table>

* LPI Local Performance Indicator
Preventing unwanted alarm signal measures

AF&RS met the target for the number of incidents attended generated by automatic alarm equipment. This helps to reduce risk in our community by increasing the availability of our resources and reducing the number of ‘blue light’ journeys we make.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI FAM</strong> Total number of malicious false alarms</td>
<td>Monitor only</td>
<td>234 incidents</td>
</tr>
<tr>
<td><strong>LPI FAM%</strong> Percentage of malicious false alarms not attended</td>
<td>5%</td>
<td>13% (31 out of 234)</td>
</tr>
<tr>
<td><strong>LPI 149i</strong> False alarms caused by automatic fire detection in non-domestic properties per 1,000 non-domestic properties</td>
<td>72.4 or 2,327 alarms</td>
<td>63.9 or 2152 alarms</td>
</tr>
<tr>
<td><strong>LPI 209iii</strong> Percentage of fires attended in dwellings where no smoke alarm was fitted</td>
<td>Monitor only</td>
<td>34% (180 out of 522)</td>
</tr>
</tbody>
</table>
In 2016/17 we recorded two fatalities in fires, our joint lowest yearly total on record which is a good indication that risk is reducing. The cause of death for one of these fatalities remains subject to the Coroner. Though each fatality is a tragic loss and we will always strive towards having zero fire fatalities, it is good that the number of fatalities in fires remains low. We do not set targets for injuries and fatalities as the numbers are too small to indicate significance. AF&RS investigates each fire fatality to ensure that we learn as much as we can to prevent further incidents happening.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPI 49ii Number of deaths arising from primary fires per 100,000 population</td>
<td>Monitor only</td>
<td>0.2 or 2 deaths</td>
</tr>
<tr>
<td>LPI 49iii Number of injuries (excluding where first aid or advice about precautionary check administered) per 100,000 population</td>
<td>Monitor only</td>
<td>5.2 or 58 injuries</td>
</tr>
</tbody>
</table>
Calls received

We monitor the total emergency calls received and the totals attended to calculate the attended as a percentage of the total. Incidents not attended include repeat calls (where we have already been informed of the incident) and incidents where our call challenging indicates attendance is not required.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI 001</strong> Number of 999 calls received</td>
<td>Monitor only</td>
<td>18,937</td>
</tr>
<tr>
<td><strong>LPI002</strong> Number of incidents attended as an emergency</td>
<td>Monitor only</td>
<td>11,342</td>
</tr>
<tr>
<td><strong>LPI003</strong> Percentage of 999 calls attended as an emergency</td>
<td>Monitor only</td>
<td>59.9%</td>
</tr>
</tbody>
</table>
Response measures

We calculate our response using “Categories” which differentiate between different levels of population density. Our target is to respond to incidents where more people are based in a shorter period of time. We are pleased to report that all response targets have been met. The target for answering emergency calls was also met.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI</strong> Calls for assistance to Fire Control answered within seven seconds</td>
<td>94%</td>
<td>96.6% (21,478 out of 22,228)</td>
</tr>
<tr>
<td><strong>LPI</strong> Initial call of fire to a building in Category 1 – First appliance attending within eight minutes</td>
<td>85%</td>
<td>92% (992 out of 1,076)</td>
</tr>
<tr>
<td><strong>LPI</strong> Initial call of fire to a building in Category 2 – First appliance attending within 10 minutes</td>
<td>90%</td>
<td>97% (129 out of 133)</td>
</tr>
<tr>
<td><strong>LPI</strong> Initial call of fire to a building in Category 3 – First appliance attending within 15 minutes</td>
<td>95%</td>
<td>98% (228 out of 232)</td>
</tr>
<tr>
<td><strong>LPI</strong> Full Pre-determined attendance mobilised to initial call of fire to a building</td>
<td>95%</td>
<td>100% (1,434 out of 1,441)</td>
</tr>
<tr>
<td><strong>LPI</strong> Initial call of fire to all other fire incidents – First appliance attending within 15 minutes</td>
<td>95%</td>
<td>97% (2,248 out of 2,317)</td>
</tr>
<tr>
<td><strong>LPI</strong> Initial call to life threatening Special Service Call – First appliance attending within 15 minutes</td>
<td>95%</td>
<td>98% (275 out of 282)</td>
</tr>
</tbody>
</table>
Community Fire Safety measures

We do not set targets for our Community Safety measures as we undertake them when there is a need rather than set a numerical target. We do however monitor the number completed.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI Number of Home Fire Safety Checks completed</strong></td>
<td>Monitor only</td>
<td>8,316</td>
</tr>
<tr>
<td><strong>LPI Number of educational visits undertaken</strong></td>
<td>Monitor only</td>
<td>344</td>
</tr>
<tr>
<td><strong>LPI Number of off-station community events attended to deliver fire safety message</strong></td>
<td>Monitor only</td>
<td>308</td>
</tr>
<tr>
<td><strong>LPI Number of on-station events held where fire safety message delivered</strong></td>
<td>Monitor only</td>
<td>252</td>
</tr>
</tbody>
</table>
We have achieved three of our four environmental indicators. We missed our target for reducing water usage mainly due to two leaks. We are working to ensure that we identify leaks earlier in future.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI ET2</strong> Energy consumption in KW/h (electricity, gas and heating oil) compared to 2011/12 baseline</td>
<td>-25% or 4,888,265 kWh</td>
<td>-31% or 4,487,258 kWh</td>
</tr>
<tr>
<td><strong>LPI ET3</strong> Carbon emission (tonnes) compared to 2015/16</td>
<td>-5% or 2,136 tonnes</td>
<td>-5.1% or 2,133 tonnes</td>
</tr>
<tr>
<td><strong>LPI ET4</strong> Water consumption (metered supply only - m³) compared to 2015/16</td>
<td>-5% or 8,991 m³</td>
<td>+5.1% or 9,946 m³</td>
</tr>
<tr>
<td><strong>LPI ET8</strong> Renewable energy to be 20% of all usage by 2020 (5% in 2016/17)</td>
<td>226,474 kWh</td>
<td>7% or 336,886 kWh</td>
</tr>
</tbody>
</table>
Health and safety measures

This is the second year of AF&RS’s two Health & Safety targets. These are three year targets. We have met our target to reduce vehicle incidents but are off target with reducing work-related injuries, however we are confident that the processes are being put in place that will help achieve target at the end of the three years.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI H&amp;S1</strong> to reduce lost time in relation to work-related injuries and illnesses by 10% over the next three years</td>
<td>1,137 days/shifts lost</td>
<td>1,824 days/shifts lost</td>
</tr>
<tr>
<td><strong>LPI H&amp;S2</strong> to reduce the number of vehicle incidents in which AF&amp;RS hit something fixed or stationary and are at fault by 5% over the next three years</td>
<td>54 occurrences</td>
<td>45 occurrences</td>
</tr>
</tbody>
</table>
# People measures

We have missed our target on both sickness indicators, with increases in both long and short term sickness. We continue to improve the quality and availability of information available to managers to allow them to effectively manage staff sickness and expect to see a further improvement next year. We are pleased that the target for completing Return to Work Interviews after sickness was met. For the first time we measured the completion of Personal Development Reviews for our staff and have just failed to meet our target. We have undertaken training for all staff involved in the process, which should help to improve completion next year.

<table>
<thead>
<tr>
<th>Description</th>
<th>Target 2016/17</th>
<th>Actual 2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LPI 12i</strong> Number of working days/shifts lost to sickness per Wholetime and Control uniformed staff</td>
<td>6.10 shifts lost per person</td>
<td>8.35 shifts lost per person</td>
</tr>
<tr>
<td><strong>LPI 12ii</strong> Number of working days/shifts lost to sickness per all staff (excluding Retained Duty System)</td>
<td>6.10 shifts/days lost per person</td>
<td>8.71 shifts/days lost per person</td>
</tr>
<tr>
<td><strong>LPI HR4</strong> % of Return to Work Interviews completed within 15 days</td>
<td>90%</td>
<td>95% (384 out of 404)</td>
</tr>
<tr>
<td><strong>LPI HR5</strong> Personal Development Review completion – 95% completed by August 2016</td>
<td>95%</td>
<td>90% (738 out of 82)</td>
</tr>
</tbody>
</table>
Compliments and complaints

Compliments
In 2016/17 we received 101 compliments about the service we provide. Each compliment is acknowledged and fed back to the staff involved.

Complaints
In 2016/17 we received 9 complaints about our service that were substantiated and we were at fault. This is a reduction of six from the 15 complaints received last year. While we investigate and seek to learn from each complaint we are pleased that the numbers were too few to identify any patterns. A further 22 complaints were received which, upon investigation, were withdrawn, not substantiated or found not to be about AF&RS.

Customer satisfaction surveys
Each year we send customer satisfaction surveys to people who have been a victim of a domestic or non-domestic building incident. We also send a survey form to a sample of people who have received a Home Fire Safety Visit (HFSV). All responses are confidential and are administered by an independent research company. The survey forms ask people about how well we did our job and whether the Service met their expectations. By asking questions about the gender and ethnicity of the person we have served, we will also be able to make sure that we are not disadvantaging any areas of our community. As this is a national service undertaken by most fire and rescue services we are able to benchmark the findings to ensure that we are providing an excellent service.

98 people who we assisted with emergencies answered the question about how satisfied they were with the overall service we provided. 89 or 91% said that they were very satisfied with the service and four or 4% said that they were fairly satisfied.

Regarding response to emergencies, 80 respondents expressed an opinion as to the speed of response. Of these 45 or 56% felt that the response was quicker than expected, 33 or 41% felt the response was as expected and two or 3% had no opinion. No respondents felt that the response was slower than expected.

For HFSVs of the 117 people who expressed an opinion 88% or 103 said they were very satisfied with the service and 10% or 12 said they were fairly satisfied.
Community Safety - Case Study

Referral / Alert to Avon Fire & Rescue Service

Concern was raised by one of our Partnership agencies ‘Places for People’ regarding X. He was a vulnerable adult with poor mobility and health, living conditions are poor with extreme hoarding upstairs in bedrooms, mainly old newspapers and boxes, and the level of hoarding was at least to waist height and the high risk of fire due an extreme level of hoarding upstairs.

Joint agency Visit

A joint visit was carried out by a Community Safety Worker (CSW) and Places for People support worker. A Home Fire Safety Visit was carried out in which bespoke fire safety advice was given to X. Smoke alarms were tested and confirmed to be in working order.

Report

X admitted being an Alcoholic and was currently suffering with a leg ulcer which was being treated by district nurses. There was clear evidence of self-neglect with both his personal health and living conditions. He slept downstairs in the dining area of the kitchen, which is unhygienic and dirty, a strong odour of urine and human waste was present and all surfaces were dirty and cluttered.

Upstairs was cluttered and specially two bedrooms contained large amounts of hoarding material that was a real concern in case of fire. The toilet was very unhygienic with human waste on the floor and walls. Although X recognised the importance of trying to get himself in order the CSW was not convinced that he would follow through on his promises. Medication seemed to be missed as certain days were still in his box.

Outcomes

A safeguarding alert was made to the unitary council’s adult services. X was assessed through the care management process and a social worker was allocated.

There are still ongoing assessments taking place by the social work team to put in place adequate care assistance.

A joint referral was also made to an appropriate voluntary organisation. This is currently being reviewed.

Risk intelligence

This was gathered to assist crews in an emergency response and a RP0/11 completed.
1. **SUMMARY**

At its meeting on 26 May 2017 the Fire Authority received a report into the damage caused to two turntable ladders 2013 for which transportation, inspection and repair costs of £130,985 were incurred. This sum was written off by the Fire Authority as the insurers refused the claims. The Fire Authority also referred the matter to the Committee for consideration. This report also includes information concerning a more recent similar incident and the action taken.

2. **RECOMMENDATIONS**

The Committee is asked to comment on the report and make recommendations.

3. **BACKGROUND**

**Introduction**

3.1 In September 2012, the Fire Authority introduced two new state-of-the-art turntable ladders (TTL) vehicles into service. Costing approximately £500,000 each, they featured a 27-metre Metz ladder on a MAN TG chassis. These specialist appliances have an on-board stretcher and an on-board generator which supplies power to sockets in the cage itself. This allows easier use of tools in the cage. Water jets are built into the floor of the cage to help cool down any surfaces firefighters may need to work on. Training was provided to staff when the TTLs were first introduced.

3.2 In August 2013, North Fire identified damage to the TTL based at Weston-super-Mare Fire Station during a statutory inspection. In October 2013,
damage was also identified in respect of the TTL base at Bath Fire Station, again during a statutory inspection.

3.3 Given the significance of the damage, the TTLs were removed from operational use for safety reasons and were sent to the manufacturers (Metz) in Germany for full inspection and repair.

3.4 An investigation was completed by local line managers into each incident but these failed to identify the cause of the damage in either case. In view of this, and given the costs of the repair quoted by Metz, the then Deputy Chief Fire Officer (DCFO) instructed the Health, Safety and Welfare (HSW) Manager to complete a full investigation into both instances.

3.5 Both full investigations revealed there had been significant failures in relation to adherence to procedures both on station and during the initial stages of the investigations. These failing resulted in a lack of evidence in relation to how the damage had occurred.

3.6 Whilst the most likely cause of the damage was identified in the full investigation reports, the lack of evidence played a significant part in the insurer’s decision to reject a claim for the losses. In essence, the insurers argued that there had been no insurable event to which the damage could be attributed.

**Timeline of events**

**Discovery of damage to Weston TTL**

3.7 On 7 August 2013, a qualified engineer from North Fire was carrying out a proactive statutory inspection on the TTL at Weston-Super-Mare Fire Station, registration WU12 EXG (fleet number F/55/12). At the time North Fire was the UK agent for Metz and was completing the pre-planned six monthly inspection, thorough examination and test required under the Lifting Operations and Lifting Equipment Regulations 1998. This was part of a wider proactive programme of maintenance which also includes two daily inspections (at change of shift) and one weekly inspection by station staff; known as A and B routines.

3.8 The engineer discovered damage to the floor of the cage, namely on the front left hand side. Such was the damage, that the engineer ceased the inspection and reported it to the Fleet Engineer. As safety critical parts of the TTL were damaged, the vehicle was taken off the run and was removed to the Technical Centre at Avonmouth for inspection. Both the Fleet Engineer and Fleet Manager observed that the offside front lower corner of the cage had been forced upwards causing the frame to buckle slightly. There were three clear linear gouges going from front to back, the depth of which indicated the initial impact was at the front of the cage floor on the offside corner. There was bare metal showing at the deepest part of the scratches, which became shallower and trailed off after a few inches. There were also sections of paint missing along the edge of the front offside corner of the cage. Concerns were
expressed as to whether the upright and diagonal struts on the ladder section had bowed or whether the weld points had been weakened by the impact.

3.9 The damage was logged on OSHENS (online incident recording software) immediately and was allocated as per procedure to the then Station Manager for Weston-Super-Mare (WSM), to investigate as required by HSW SOP5 Accidents and Incidents. The Fire Authority’s insurer’s intermediaries at Bristol City Council were notified of the incident via an automated email from OSHENS at 14:43 on 7 August 2013.

3.10 On 9 August 2013, the Fleet Engineer confirmed to the investigator that the TTL would be returned to the manufacturer in Germany for repairs. The UK agent North Fire did not have the facilities to complete the repairs. The Fleet Engineer noted that this decision was made because:

- some of the welds around the cage showed signs of stress and could fail.
- the cage was twisted and did not sit squarely on the ladder.
- there were two support brackets that were out of line by 10mm

3.12 The TTL was subsequently driven to Germany by an employee of North Fire. However, no opportunity was given to the investigator nor the loss adjuster/insurers to inspect, examine or photograph the appliance before it left to be repaired. In the case of the insurers this requirement formed part of the policy.

**Discovery of damage to Bath TTL**

3.13 On 29 October 2013, just over two months after the Weston TTL was found damaged, a qualified engineer from North Fire attended Bath Fire Station to carry out the same statutory inspection, thorough examination and test on the Bath TTL, registration WU12 EXF (fleet number F/57/12). As before, whilst completing the work the engineer discovered significant damage to the cage. Again, the engineer ceased the inspection and reported the damage to our Fleet Engineer.

3.14 The damage was not logged on OSHENS by the station staff until 6 November 2013 and was allocated as per procedure to the then Bath Station Manager to investigate. However, as the station staff reported the incident as a ‘near miss’ not a vehicle incident Bristol City Council were not notified of the incident via an automated email from OSHENS.

3.15 Arrangements were made for the Bath TTL to be taken to the Technical Centre where it was then inspected by the Fleet Engineer, the Lead TTL Instructor and the North Fire engineer. It was agreed the cage was twisted and there were scrape marks round the front and underside of the cage and safety concerns were raised over the security of the cage and its anchor point to the ladder.
3.16. A decision was made to send the TTL to Metz in Germany for a full inspection and repair and again, the Fleet Engineer made arrangements for it to be driven to Germany by an employee of North Fire. As with the Weston TTL, neither the investigator nor the loss adjuster/insurers were given the opportunity to inspect, examine or photograph the appliance before it left. In addition, a Service Report was not provided by North Fire documenting the damage that the engineer observed.

**Outcome of initial investigations**

3.17. In the case of the Weston TTL, the investigating officer stated he had been unable to get any information from the station staff. Attempts to investigate properly were also hampered by the TTL being sent to Germany before documentary and photographic evidence of the damage could be collated as per procedure. The investigating officer concluded that the driver had hit an object and not reported it, or the TTL had been impacted by a third party who had not left their details. However, the investigation was not thorough and the only remedial measures recorded were to remove the TTL from service and check CCTV for evidence of an impact on the station. Neither of these were in fact remedial measures and such actions would not prevent a reoccurrence.

3.18. In the Bath TTL case, the investigating officer noted that some staff may have been trained incorrectly on how to pitch the TTL to a building. He also noted that the TTL may not have been robust enough for this purpose but offered no supporting evidence of this. However, credible remedial measures were implemented which included the fitting of a monitoring device when the power take off (PTO) was engaged, retraining the instructors and operators and the introduction of an activity log.

**Request for a full investigation**

3.19. In view of the weakness of the initial investigations, the HSW Manager expressed concerns that further avenues and evidence should be explored as part of the investigations. The loss adjuster, Gallagher Bassett, also instructed Sterling Claims to investigate the two incidents further. Sterling Claims interviewed the Weston investigator with the relevant Group Manager on 10 January 2014. Sterling Claims also met with HSW Manager on 7 March 2014 to discuss both incidents further including the extent of the damage, how this occurred, why it was not reported by the station staff and what we had done to prevent a re-occurrence.

3.20. Non-itemised quotes were received for the inspection and repairs to the TTLs of £50,677 (plus VAT) for Weston and £53,447 (plus VAT) for Bath. The HSW Manager requested an itemised list of works and costs for each TTL in order to assess whether all or part of the works carried out in Germany were done so as a result of the damage found. It was noted that given the long standing relationship between the Fire Authority, Metz and North Fire that the Fleet Engineer had accepted the basic quotes in good faith as a true representation of the cost to repair the damage of each vehicle.
3.21. The HSW Manager also sought advice from the then DCFO and Assistant Chief Fire Officer (ACFO). Following a one-to-one meeting with the DCFO on 11 February 2014, he instructed the HSW Manager to complete a full investigation into the damage found and into the potential procedural issues identified. This was to be conducted on behalf of the Service Management Board (SMB).

**Outcome of the full investigations**

3.22. The full investigation reports are available for consideration and provide a narrative of the evidence and findings. However, it was noted that, on the balance of probabilities, the immediate cause of the damage to the Weston TTL was a frontal impact with a linear structure whilst the vehicle was being driven with the cage in its housed position. A less probable cause existed in that an operator could have overridden the safety systems whilst operating the cage and subsequently experienced a significant collision with a linear object. Whilst this was much less likely, it could not be ruled out completely.

3.23. The evidence indicated that this was a significant impact and that staff present were likely to have been aware it had occurred. However, no collision was reported on OSHENS and a failure to complete daily and weekly A&B routines (visual inspections completed on station) meant that the date of the damage could not be identified, nor could this be narrowed down to a particular period or even a specific watch. As a result no managerial action could be taken by operational line managers in this respect.

3.24. Following procedural failures both on station and during the initial investigation, the root causes of the incident could not be identified with any accuracy. However, the evidence collated as part of the full investigation supported a number of potential root causes:

- human error when driving the TTL/ failure to account for the cage and ladder set position when manoeuvring.
- TTL drivers did not consistently carry out and/or record the A&B routines during which damage *may* have been identified, reported and addressed sooner.
- Watch Managers did not monitor the completion of vehicle checks.
- potential training discrepancies in the technique for accessing the cage.

3.25 In the case of the Bath TTL, the damage was consistent with an impact with an object or structure whilst extending, “gliding” or depressing the cage into position. Again, there was a less probable cause which was that an impact occurred whilst driving the TTL. As with Weston, a failure to complete A&B routines meant that the date of the damage could not be identified and again this could not be narrowed down to a particular period or a specific watch. As before, no managerial action was taken by operational line managers in this respect.

3.26 The potential root causes identified in relation to the Bath TTL damage were:
human error when operating the TTL i.e. failing to take account of the overrun when operating the controls.

potential blind spots when extending the TTL into position, collision with object or structure.

training discrepancies in the techniques taught to some instructors, namely in relation to grounding the cage.

the re-introduction of techniques (or habits) suitable for the old Bath TTL which are problematic when employed on the new TTL.

lack of familiarity and experience with the new TTL operating system (introduced in 2012).

potential override of the safety system following a minor collision and failure to account for the direction of travel/impact hazard when correcting course (secondary impact occurs).

failure to carry out and/or record the A&B routines during which damage may have been identified.

Recommendations and actions following the full investigations

3.27 The underlying issues in both cases centred around procedural failures, lack of adherence to policy and potential training / familiarity issues. The recommendations that were made to prevent a reoccurrence are set out below and assurance is given under each recommendation as regards the action taken.

a) Ensure all drivers and operators understand the safety reasons for reporting accident damage:

- The full investigation report was provided to the respective Station Managers for Weston-Super-Mare Fire Station and Bath Fire Station on 17 March 2014 with a view to each manager communicating the safety issues to the staff
- Both reports were provided to the ACFO who confirmed he would follow up any operational recommendations

b) Monitor the completion of A and B routines for 3 months at Weston / Bath stations to ensure they are being consistently completed and submitted

- The relevant Station Managers monitored A&B routines for 3 months.
- This is now monitored as part of the H7 Operational Assurance Audits which are recorded on OSHENS. Operational managers are required to address any shortfall in performance.
- SD Memo 26-2014 – ‘A&B routine recording’ was published confirming the procedure for contacting Imagine IT to address the submission issues in relation to the electronic A&B routines
- SD Memo 34 -2014 – ‘Reporting Fire Appliance and Operational Equipment Defects’ was published reconfirming the defect reporting process (Trans 4) for all appliances and equipment

- SD Memo 51-2014 – ‘Importance of carrying out vehicle A&B routines’ was published reiterating the importance of A&B routines and the recording of these

- Station Reference Guides were later issued which included A&B routine reporting within the station daily activities / records

- The weaknesses of the current A&B routine system were identified again in the BS18001 internal audits in 2013 and 2015 and placed on the action plans. A commitment was made to source and implement an improved system of recording. Discussions have been ongoing since July 2014 to put in place an appropriate electronic system. The decision was made in January 2016 to commission Imagine IT to review all the IT systems for the centre including A&B routines. Their review report was delivered to SMB in August 2016. In January 2017 a working group was set up to redesign the A&B routine system and the following month Imagine IT demonstrated a new system. In March 2017, an A&B routines and Tranman scoping meeting was held. In April 2017, it was agreed to adopt Tranman with scoping work to commence in May 2017 with the system provider.

c) **Daily functional tests will be carried out with two competent staff**

- SD Memo 62 -2013 ‘Procedures to be adopted by TTL stations’ is published and communicated this requirement to all TTL station staff.

- The use of two competent staff has been part of operational procedures since 2014 and should be monitored by the local Station Manager.

- SD Memo 34 -2014 – ‘Reporting Fire Appliance and Operational Equipment Defects’ was published reconfirming the defect reporting process (Trans 4) for appliances

d) **Install a device to monitor impacts and detect technical issues on the TTL**

- All TTLs are fitted with an impact sensor with an audible alarm to alert the operator if an impact occurs. The sensor operates once the power take off (PTO) is engaged. Under normal driving conditions the PTO is not engaged but a GPS sensor records where the appliance is located, whether it is moving and the date and time

e) **Introduce an activity log to record the use of the TTL. This must be signed by the Officer in Charge**
• A log book was designed and implemented by one of the investigations Station Managers following the investigations.

• SD Memo 62-2013 ‘Procedures to be adopted by TTL stations’ communicated this requirement to all TTL station staff

f) Ensure staff are aware that any damage to the TTL must be photographed

• A programme of investigation training has been on-going since 2016 in which all Watch Managers are being trained in investigation techniques, including photographic and documentary evidence

g) Staff will not leave the TTL unattended when off the Fire Authority’s premises

• SD Memo 62- 2013 ‘Procedures to be adopted by TTL stations’ communicated this requirement to all TTL station staff

h) All operators have been reassessed

• TTL instructors at Weston and Bath were retrained in 2013/2014 following these incidents. Training was delivered by the Lead TTL Instructor who was trained and certificated by the manufacturer. Instructors were then required to cascade that training to all TTL operatives

i) All TTL drivers have been reassessed

• TTL drivers reassessed at Weston post the incident in 2013. There are no records on Firewatch (the centralised data base of training records) for Bath TTL drivers.

• SD Memo 3-2016 ‘Familiarisation training for vehicles including specialised appliances’ confirmed the introduction of familiarisation training for special appliances as well as a new MOST standard for vehicle familiarisations.

• SD Memo 4 - 2016 ‘Amendment to SD Memo 13-2016’ reconfirmed that due to differences in size, vehicle characteristics and handling, the only drivers permitted to drive TTLs and prime movers will be those that are familiar with and have previously driven that particular vehicle type.

j) The correct and up to date A&E note will be published on the intranet

• The Appliance & Equipment (A&E) Note for the Metz L27 (Bath and Weston) was published following the investigations and remains up to date on the intranet where it is accessible to all staff.

k) Ensure that training records are held centrally on Firewatch and not just locally or by the instructor on their personal drive

• Records are no longer kept locally for the TTL, all are stored centrally on Firewatch as required.
l) Ensure that a full range of photographs and, if necessary video footage is taken of significant or unusual damage before a vehicle is released for repair

- SD Memo 62-2013 ‘Procedures to be adopted by TTL stations’ communicated this requirement to all TTL station staff.
- A programme of investigation training has been on-going since 2016 in which all Watch Managers are being trained in investigation techniques, including photographic and documentary evidence.
- It is not known whether this matter was reiterated to the Fleet Manager by either his line manager at the time or the DCFO.

m) Record a full description of the damage

- SD Memo 62-2013 ‘Procedures to be adopted by TTL stations’ communicated this requirement to all TTL station staff.
- HSW SOP 5 Accident and Incidents details reporting and investigation procedure requires this (reviewed annually).

n) Ensure that statements are taken from staff in a timely manner, particularly when their evidence will be relied on to support investigation conclusions

- HSW SOP 5 Accident and Incidents details reporting and investigation procedure requires this (reviewed annually).
- Bi-weekly monitoring by HSW Unit, lack of process reported to senior line managers to performance manage.

o) Ensure that statements are provided on the correct witness statement form and not on Admin 42 forms

- Witness statement form available on intranet.
- Statements duly returned if not on correct form.
- HSW SOP 5 Accident and Incidents details reporting and investigation procedure (reviewed annually).

p) Ensure that all key witnesses are interviewed, such as the TTL drivers

- Accident and Incidents details reporting and investigation procedure (reviewed annually).
- All investigations checked by final sign-off by HSW Unit; where missing statements are identified the incident will be re-opened for further investigation.

q) Ensure that training records are checked and properly recorded on Firewatch

- Training records were audited in BS18001 audit 2013 and 2015 and an action plan created.
Training targets in HSW Strategy are monitored and reported annually in H&S Annual Performance Report.

Resource Planning Unit have completed awareness training on record keeping and accuracy.

Training Management Group was created to manage the annual service-wide training plan and to prioritise training needs identified.

A series of training documents were developed as part of the training bid and planning process. Training will not be organised centrally by RPU without the correct documentation in place.

r) Ensure that risk assessments and A&E notes are checked and are current

All old A&E notes have been archived. All existing A&E notes are to be reviewed to ensure they reflect latest memos/procedures and include with hyperlinks to supporting information.

s) Ensure that all relevant documentation is recorded on Wellworker

HSW SOP 5 Accident and Incidents details reporting and investigation procedure provides information on this.

All investigations checked by final sign-off by HSW Unit, if evidence is identified as missing then the investigation is re-opened and further work requested.

t) Follow up all reasonable lines of enquiry regarding the cause of the incident

HSW SOP 5 Accident and Incidents details reporting and investigation procedure provides information on this.

A programme of investigation training has been on-going since 2016 in which all Watch Managers are being trained in investigation techniques, including training on lines of enquiry.

All investigations checked by final sign-off by HSW Unit.

u) Ensure that the insurers are involved from the outset in cases of significant damage so that they may inspect damaged vehicles before repair

All vehicle incidents are automatically reported via the online system to Bristol City Council.

It is not known whether the failure to provide the opportunity to the loss adjuster / investigators to examine the vehicles prior to going to Germany was discussed with the Fleet Manager by either their line manager or the DCFO.

SMB review
3.28 On 4 March 2014 the HSW Manager was requested to attend the SMB weekly meeting to update the Board on the two TTL incidents.

**Insurance claims**

3.29 The initial non-itemised quotes were sent to the Insurance Services Section at Bristol City Council and subsequent arrangements were made for the loss adjuster of Gallagher Bassett to fly to Germany to meet with Metz on 28/29 November 2013 whilst the Bath TTL was being repaired. The loss adjuster did not contact the Fleet Engineer whilst he was in Germany, nor on his return to the UK.

3.30 After examining the evidence available, the loss adjuster raised concerns in relation to several issues including whether the Fleet Department had obtained quotes before the TTLs went to Germany, what the transport costs were and why the insurers were not invited to inspect the TTLs before they went to Metz. They also required the full breakdown of costs from Metz.

3.31 On 7 April 2014 Bristol City Council notified the Fire Authority that the insurers were refusing the TTL claims. The reason provided was that:

“The insurers have been unable to ascertain the actual cause of damage due to the vehicles being repaired prior to submission of the claim. Attempts have been made to ascertain the cause of damage retrospectively by way of the instruction of an engineer to comment on cause and extent of damage. Unfortunately, without the original estimates and invoices from the repairers (Metz) the engineer had limited information and was not therefore able to ascertain the cause of damage or confirm the scale of repair undertaken wholly attributable to accident related damage. Without any explanation to confirm a cause or mechanism of damage it is not possible to attribute to a single incident and exclude the damage being the result of wear and tear.

3.32 On being notified of this by the Director of FAAM, the HSW Manager queried whether all the information provided to Bristol City Council and to Sterling Claims on their visit had been forwarded to Gallagher Bassett for consideration.

3.33 The Director of FAAM then notified the then Clerk on 15 April 2014 of the situation providing the Clerk with copies of all the relevant paperwork surrounding the case.

3.34 Following an exchange of correspondence and a meeting with the Principal Insurance Services Officer, all the relevant information was provided to Gallagher Bassett in support of the claims submitted.

3.35 Gallagher Bassett had confirmed that the claim had been referred to the underwriters for consideration.
3.36 The Fire Authority were notified by the Principal Insurance Services Officer on 24 July 2014 that the insurers had reviewed the decision made by Gallagher Bassett and confirmed that they would not meet the claims primarily as a result of the failure to comply with the terms and conditions of the policy. A copy of Gallagher Bassett’s letter dated 23 July 2014 advising of this decision is attached as the Appendix 1.

3.37 The Director of FAAM notified the Clerk on 31 July 2014 of the final decision of the insurers refusing the claims. A subsequent meeting was held on 11 November 2014 between the Clerk, Director of FAAM, DCFO, Fleet Engineer and Finance Manager to clarify the circumstances around each of these claims and to agree a way forward. The Clerk was instructed to contact Gallagher Bassett to ascertain if there was any flexibility and if not to instruct a panel firm of solicitors for advice with a view to potential litigation.

3.38 It appears that a subsequent meeting was held in February 2015 where the Clerk requested answers from the Fleet Engineer to the points raised in Gallagher Bassett’s letter to enable a letter to be drafted to the insurers / loss adjuster. It is not clear who attended that meeting or what was discussed.

3.39 On 3 July 2015 the Clerk advised that the answers to the points raised in Gallagher Bassett’s letter were still outstanding and that enquires made about an appeal process had indicated that it would need to be referred to the Ombudsman.

Current Position

3.40 Members can be reassured that the majority of the recommendations following the two TTL incidents have been actioned. The DCFO has ensured that a further audit has been included in the Internal Annual Audit Plan 2017/18 to ensure that the recommendations are externally scrutinised and the internal auditors have been asked to identify if it would be beneficial to implement any further improvements

3.41 For those that remain outstanding, the following is in process:

- An audit has taken place in relation to TTL Instructor / Operative Refresher training. Any staff that have not been trained in the last three years will be programme in for a refresher to prevent skills fade
- An audit has taken place in relation to TTL drivers. Any drivers that do not have a record of familiarisation training on Firewatch will be assessed
- A&B routines will be transferred to the new Tramman system following the scoping and design by the system provider

Recent Incident
3.42 Damage was discovered to the fibreglass cowling on the base of the turret of the TTL at Temple Fire Station on 18 May. This was reported on OSHENS on 23 May 2017.

3.43 The TTL had been used operationally on the 12 May 2017 at an incident at the Paintworks, Amos Vale, Bristol, BS4 3EH. It was reported that the vehicle was checked post incident and no damage was noted.

3.44 The investigating officer has recorded that A and B routine records (daily and weekly vehicle checks) were not submitted in the intervening period between the operational incident and discovery of the damage and so he is currently unable to pinpoint the event, exact date or time the damage occurred. The investigating officer has reported that the damage is consistent with the ladder having been depressed and the anchor points on the underside of the ladder making contact with the vehicle itself. He has noted that there is a safety sensor that should prevent this but has indicated that the anchors may be outside the scope of the system. The investigation is still on-going. The non-compliance of A and B routines is subject to an investigation under the discipline policy.

**All Incidents since 2013**

3.45 For completeness sake Appendix 2 sets out all the incidents involving the TTLs since 2013.

4. **CONSIDERATIONS**

4.1. **Contribution to Key Policy Priorities**

A robust process of establishing debt and the subsequent collection of that debt is essential to ensure that the Fire Authority receives amounts properly due to it.

4.2. **Financial Implications**

These were dealt with in the Fire Authority report and additional information is provided in Appendix 2.

4.3. **Legal Implications**

None arising from this report.

4.4. **Equality & Diversity Implications**

None identified.

4.5. **Corporate Risk Assessment**

CR7 includes risks in relation to health and safety.
4.6. Environmental/Sustainability Implications

None identified.

4.7. Health & Safety Implications

These are dealt with in the report.

4.8. Crime & Disorder Implications

None identified.

5. BACKGROUND PAPERS

a) TTL ladder investigation report Weston
b) TTL ladder investigation report Bath
c) Fire Authority Report – 26 May 2017

6. APPENDIX

2. TTL incidents August 2013 onwards

7. REPORT CONTACT

Lee Troake, Health and Safety Manager, extension 384.
Avon Fire & Rescue Service  
c/o Jonathan Jacobs  
Bristol City Council Insurance Offices  
Room 248  
City Hall  
College Green  
Bristol  
BS1 5TR

Dear Sirs

23 July 2014

Re. Damage to fire appliances WU12 EXG and WU12 EXF

I have been asked to communicate your insurer’s views following your formal request for a review of the decision reached by Gallagher Bassett.

In assessing the decision, the facts of the matter have been considered and are summarised below.

- The Incident Notification Form IN002312 provided in respect of this matter states on or around the 7th August 2013 damage was noted to the cage of the turntable ladder of vehicle WU12 EXG during a maintenance inspection. No explanation of how the damage occurred was provided within the Incident Notification Form and at no point subsequent to the completion of the form has an explanation for how the damage could have occurred been provided or any date of incident.
- On the 23rd October 2013 a copy of the incident notification form was presented by email to Gallagher Bassett as notification of a claim. The covering email confirmed the claim was initially considered to fall within the excess.
- A copy of a quotation provided by North Fire in the sum of £50,677.00 and dated 29th August 2013 was provided to Gallagher Bassett by email on the 4th November 2013. The email queried if an engineer instruction would be required.
- North Fire is not the repairer but the UK agent acting on behalf of the repairer, Metz.
- An engineer was instructed by Gallagher Bassett on the 6th November 2013. On the 7th November 2013 Gallagher Bassett were informed by Bristol City Council the vehicle repairs had been completed by Metz in Germany.
- A copy of the North Fire invoice in respect of the repairs was provided in the sum of £50,677.00 plus VAT. The invoice date is the 31st October 2013.
On the 21st January 2014 an email from Bristol City Council confirmed the original Incident Notification Form provided did not relate to vehicle WU12 EXF. A revised Incident Notification Form IN002398 was provided confirming damage was noted to the cage of the vehicle by Angloco maintenance engineer during inspection.

Requests were made by telephone and email by George T Mighall and Gallagher Bassett for copies of the original Metz estimate and invoice for repairs to be provided. These requests were made to Bristol City Council, Avon Fire and Rescue Service and Metz.

On the 28th February 2014 an email was sent from Marco Himmighoefer of Metz to Paul Beard of Avon Fire and Rescue Service containing a document addressed to Avon Fire and Rescue headed as ‘detailed quotation for the repair of WU12 EXF’. As this document is addressed to Avon Fire and Rescue and not North Fire the agent of Metz, this document would not be the original estimate provided by Metz to North Fire.

George T Mighall was informed by Bristol City Council to make no further contact with Metz as they consider the matter closed. The original estimate and invoice provided by Metz to North Fire have not at any time been provided to Gallagher Bassett or George T Mighall.

Without the original documentation George T Mighall has been unable to fully assess the damage incurred or provide comment on how the damage was sustained and if the repairs relate to the damage alleged to be accident related.

The damage identified to WU12 EXG in August 2013 was notified to Gallagher Bassett in October 2013. It would be reasonable to assume Avon Fire & Rescue Service would have knowledge in August 2013 that a claim would be presented by them in respect of the damage to the vehicle. By the time the claim was presented in October 2013 the position of the claim was prejudiced by the completion of the repairs preventing inspection of the vehicle to assess the cause of damage and value of repairs.

In addition despite requests over several months, the insured has failed to provide information requested in order to enable the assessment of the claim. Specifically the original estimate and invoice provided by Metz to North Fire.

On this basis the general conditions of the policy have not been met. Specifically, Item 3 Duties in the Event of Occurrence, Claim or Legal Proceeding.
George T Mighall is a Consulting Automobile Engineer appointed by Gallagher Bassett with authority from Bristol City Council to confirm the cause and extent of damage sustained to the vehicle.

Requests were made by telephone and email by George T Mighall and Gallagher Bassett for copies of the original Metz estimate for repairs to be provided. These requests were made to Bristol City Council, Avon Fire and Rescue Service and Metz.

On the 28th February 2014 an email was sent from Marco Himmighoefer of Metz to Paul Beard of Avon Fire and Rescue Service containing a document addressed to Avon Fire and Rescue headed as 'detailed quotation for the repair of WU12 EXG'. As this document is addressed to Avon Fire and Rescue Service and not North Fire the agent of Metz, this document would not be the original estimate provided by Metz to North Fire.

George T Mighall was informed by Bristol City Council to make no further contact with Metz as they consider the matter closed. The original estimate and invoice provided by Metz to North Fire have not at any time been provided to Gallagher Bassett or George T Mighall.

Without the original documentation George T Mighall has been unable to fully assess the damage incurred or provide comment on how the damage was sustained and if the repairs relate to the damage alleged to be accident related.

While similar to the facts of the first claim the facts of the matter relating to vehicle WU12 EXF are detailed below.

- An email was sent to Gallagher Bassett on the 6th November 2013 attaching Incident Notification Form IN002390. The email explained the matter was initially treated as a near miss, but damage was now assessed in the region of £50,000.
- George T Mighall was instructed on the 26th November to inspect the vehicle in Germany prior to the completion of works. He confirmed on the 2nd December he was able to inspect the vehicle and advised that Metz considered the damage to the vehicle identical to that of WU12 EXG.
- Photographs of the vehicle were received by email on the 5th December 2013 which demonstrates scuffing damage to the front offside light and side of vehicle.
- On the 15th December George T Mighall confirmed the photographs provided are not consistent with the damage identified by Metz during the visit to Germany. Further information was requested from Bristol City Council.
The duties applicable in this item are to:

as soon as reasonably practicable:

(i) notify the Company of such occurrence;
(ii) provide in writing as required all particulars and information as the Company may request;

Turning to the damage to the vehicle WU12 EXG itself, for an indemnity to be provided the damage to the insured vehicle must be caused by accidental means. As the ability to inspect the vehicle prior to repairs was not afforded to the insurer, it has not been possible to establish the cause of the damage.

Vehicle WU12 EXF is also stated to have sustained similar damage. Both vehicles are similar in age and build and therefore the likelihood of wear and tear or mechanical breakdown cannot be excluded as a cause. Wear and tear and mechanical breakdown are specific exceptions to Section 1 of the property damage section of the policy.

This Section excludes all liability for:

a) loss of use, depreciation, wear and tear, mechanical or electrical breakdowns, failures or breakages;

All statements regarding indemnity should be applied to the claims in respect of both vehicles.

On the basis of the above the duties of the insured have not been satisfied so as to provide an indemnity from the policy.

Notwithstanding, had the duties been satisfied, the absence of any explanation or date as to an actual accidental event and the fact that the cause of the damage is unconfirmed, would prevent the policy from responding.

In the circumstances we are sorry to have to inform you that your insurer supports the decision made by Gallagher Bassett to repudiate the claim.

Yours faithfully

Ian Ross-Bain
Business Development and Client Manager
E-mail Address: ian.ross-bain@gbtpa.com
<table>
<thead>
<tr>
<th>OSHENS no.</th>
<th>Date</th>
<th>Incident Type</th>
<th>Station</th>
<th>Description</th>
<th>Primary cause</th>
<th>Root Cause</th>
<th>Damage</th>
<th>Costs £</th>
<th>Remedial measures/actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2336</td>
<td>28.19.13</td>
<td>Near Miss</td>
<td>Temple</td>
<td>At incident 009766 Fire @ Black Rock Fire Arms Centre Avon &amp; Somerset Police. Upon repositioning the TL (09A2) to a different part of what was a construction site, whilst extending the jack's the side of the rear right hand side jack casing scraped alongside a skip. Upon inspecting I noted a minor scratch to the paint work of the jack casing.</td>
<td>Hit something</td>
<td>Human error fixed or stationary</td>
<td>Scratches to paintwork</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2390</td>
<td></td>
<td>Near Miss</td>
<td>Temple</td>
<td>Whilst training with the turntable ladder, I was asked by the instructor to 'bridge' the cage of the ladder to the parapet wall of the fire station (09 Temple). As I slowly lowered the cage onto this parapet wall, the impact warning sounded and the ladder controls were isolated. I was in the process of re-establishing control of the ladder utilising the impact override features when a fire call meant that I had to leave the training area and attend an incident. When I returned from the incident the ladder had been successfully made up and appeared undamaged and to function normally 25.19.13 - further information has been provided to the HSW Unit by X. X advised that this near miss did not concern the fact that the TL impact warning system went off. The near miss occurred when the crews attempted to make up the appliance as it had become wedged on the roof. It was caught on the plastic flashing. The crew had to override the system to bring the TL up and get it free. When the TL finally came free the ladder sprung up and flexed quite a bit. There was some damage to the TL. The crew repaired the minor damage to the roof.</td>
<td>Procedural issue</td>
<td>Human error. Trainee operator</td>
<td>Minor damage to TL and roof</td>
<td>£ 156.00</td>
<td>Yard safety plan instigated. Yard markings. Talk with watch re: safety, cones etc.</td>
</tr>
<tr>
<td>2454</td>
<td></td>
<td>RTC</td>
<td>Temple</td>
<td>Whilst driving 09A2 F/58/12, we had exit station 11 Speedwell, via the exit gates to the side of the station. Making my way out on to the main road, I began to turn. I heard a noise stopped, looked in the mirror with very poor lighting and then straightened up the vehicle to then make a deeper turn. On closer inspection there was a bit of mud on the tyre and a scratch to the middle section, under carriage of the offside.</td>
<td>Hit something</td>
<td>Human error fixed or stationary</td>
<td>Scratch to undercarriage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHENS no.</td>
<td>Date</td>
<td>Incident Type</td>
<td>Station</td>
<td>Description</td>
<td>Primary cause</td>
<td>Root Cause</td>
<td>Damage</td>
<td>Costs £</td>
<td>Remedial measures /actions</td>
</tr>
<tr>
<td>------------</td>
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<td>--------</td>
<td>---------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>2533</td>
<td>29/04/2015</td>
<td>Near Miss</td>
<td>Weston</td>
<td>whilst carrying out new operator training for X. X simulated a cage rescue from the top floor of the training tower. After the cage was put into place, at the top of the tower, I then instructed X to return the ladder onto the bed of the TTL. At this point the cage seemed to be snagged on something at the top of the tower the impact sensor sounded for a second and the cage pinged off what it was snagged on and the ladder was deflecting. At this point we allowed the ladder to stabilise, then moved the cage close to ground level so we could do a visual inspection. There was a scuff mark around the front right skid pad, but no other obvious signs of damage. There was no wind, no rain at the time of the incident, the drill was carried out in dark conditions using the yard lights and the lighting of the TTL.</td>
<td>Hit something fixed or stationary</td>
<td></td>
<td>Scuff marks base of cage. Mechanic confirms no repair required. Paint marks on tower from TL pads</td>
<td></td>
<td>Appliance off run. Training redesigned to include spotter. Tower top modified</td>
</tr>
<tr>
<td>2603</td>
<td>29/04/2015</td>
<td>Near Miss</td>
<td>Bath</td>
<td>Whilst carrying out my TTL training we were moving the rescue stretcher to the cage to mount it on the front of the TTL. Whilst I was walking backwards I walked into the corner of the cage and snapped the anemometer spoon wheel of the anemometer of the TTL.</td>
<td>Other</td>
<td>Human error</td>
<td>anemometer snapped off</td>
<td>Practice of walking backwards discussed and watch emailed</td>
<td></td>
</tr>
<tr>
<td>2789</td>
<td>29/04/2015</td>
<td>RTC</td>
<td>Temple</td>
<td>On the start of the first day shift I had to take the TTL out for first day inspection. I raised the engine house door with the intention to drive the appliance out into the training yard, approximately two minutes had elapsed, out of my view (A post obstructing red/green light, stop/go system) I didn't realise that the door started to close, I proceeded at crawling speed and made light contact with underside of cage and engine house door. It was my error as I have driven out of these doors on numerous occasions, I should of checked and double checked, sorry.</td>
<td>Hit something fixed or stationary</td>
<td>Distraction</td>
<td>Minor, paint on underside of TTL cage from engine house door.</td>
<td>Discussion with driver</td>
<td></td>
</tr>
<tr>
<td>2869</td>
<td>29/04/2015</td>
<td>Near Miss</td>
<td>Weston</td>
<td>At the request of X this report is being created in regard to possible damage caused to a turntable ladder during an operational incident. At 01:00 hrs on the morning of the 29th of April 2015 at the following incident; 001631-29042015. The turntable ladder from station 18 Weston Super Mare, was in use in sector 3 of the incident. As the ladder was being housed by X and Y a stop was called as a piece of the 70 mm hose used to feed the ladder nearly or did become caught between the rounds. X called a stop and Y did an emergency stop and the housing of the ladder stopped abruptly as he let go of the controls. After this the appliance would not house. The appliance involved was appliance would not operate, possible rung damage</td>
<td>Procedural issue</td>
<td>Human error, failed to feed hose correctly whilst operating ladder</td>
<td>£ 2,638.00</td>
<td>Appliance off run. Hose management added to RA.</td>
<td></td>
</tr>
</tbody>
</table>
### Incident No. 2882

**Appendix 2**

**Date:** 11th May 2015

**Incident Type:** Near Miss

**Station:** Temple

**Description:** On the 11th May 2015 at incident No. 2361, I was riding the turntable ladder (TTL) 09A2 with X we (TTL crew) were requested to set up as an aerial a monitor for the incident. I had to get myself a BA set from appliance 09P1 to wear when in position at the head of the (TTL), I placed the BA set on the bed of the TTL, I placed the BA set in this location because there was hose everywhere (on the ground) and I had to assist Ff Corr to set up the monitor in the TTL cage. After we had set up the monitor and other equipment, I went back to appliance 09A2 to get off some hose and X got into the operators seat on the turret of the TTL. X then started to train to the TTL to the left, this action unfortunately got the BA set (No.49) caught between the bed of the TTL and the turret, he stopped straight away. We both looked to see what the problem was and X then trained the turret back in the opposite direction. There was minor damage to the turntable ladder rear access ladder housing, the BA set no.49 was damaged on the back plate and the covering on the cylinder.

**Root Cause:** Procedural issue

- Water run off on incident ground influenced decision to place BA on TL bed.
- Persons reported; pressure on crew to get TL running.

**Damage Costs £:** 711.00

**Remedial measures/actions:** Handbook checked. RA reviewed, email to staff not to place items on TL bed, review of training package and notes, hazard marking on TL bed.

### Incident No. 2887

**Date:** 11th May 2015

**Incident Type:** Near Miss

**Station:** Temple

**Description:** Information passed to Technical Services. Turntable ladder was pitched against a window, TTL struck the building causing glass to fall into cage affecting self levelling system, Damage was caused to cage from striking building.

* the above information cannot be verified. The details entered above have been passed to WM X who entered them onto the system but no witness details have been entered so information is not reliable. The location and time of the incident are also factually incorrect as it appears the possible damage occurred at a different operational incident and at a different time*

**Root Cause:** Other

- Unknown as no impact incident was reported

**Damage:** Damage to self levelling system

**Remedial measures/actions:** Look at how to improve test / inspection records. Explore training in high wind

### Incident No. 3003

**Date:** 3rd June 2015

**Incident Type:** RTC

**Station:** Temple

**Description:** On arrival at no.33 colston street, the turntable ladder was positioned to deal with a flat fire on the 5th floor at the front of the building, once we had got to work as a water tower the fire had spread throw the roof and rapidly spread the length of the building. With the use of the monitor and rapid fire spread a large number of tiles were dislodged and hit the TTL on many occasions. we were unable to move the appliance for a considerable time due the essential need for it at that location. Damage was sustained to a large number of areas on the appliance such as, two blue roof beacons, driverside wing mirror, passenger side front mirror, bonnet hinge cover, operator lever and jacking lever damaged. also several noticeable dents on the bed, cab and turret of the appliance. I have since taken pictures of the above damage and can send them if required.

**Root Cause:** Hit something fixed or stationary

- Risk of rapid fire spread and falling debris not identified.
- Limited space to site appliance

**Damage:** damage from falling tiles in multiple locations, such as wing mirrors, bed, turret and cab, broken blue roof beacons.

**Remedial measures/actions:** Lessons discussed in debrief re: siting appliance

**Costs £:** 14,252.00
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>3166</td>
<td></td>
<td>Near Miss</td>
<td>Temple</td>
<td>Whilst carrying out the first day functional test of the TL the retro-fitted strap holding the arm rest mounted console to the ladder set was not removed. As the ladder set was raised the strap around the console became tight. I noticed this and told the cage operator to stop. The effect on leaving the strap on was that the turret seat reclined to a position almost parallel with the bed of the TL.</td>
<td>Procedural issue</td>
<td>Human error, operator failed to remove strap. Retaining strap unnecessary</td>
<td>seat and brackets</td>
<td>9,895.00</td>
<td>retaining strap removed</td>
</tr>
<tr>
<td>3177</td>
<td></td>
<td>Near Miss</td>
<td>Temple</td>
<td>Whilst undertaking the Turntable Ladder test the following occurred; I with X jacked the vehicle and then pressed the cage raise button. whilst the cage was automatically elevating to the usable position there was a noise and the cage console had become dislodged from its housed location and the movable rear frame of the cage was still on the floor of the cage. the cage was now up and level. No warning systems or alarms operated. At this point we stopped all actions and reported the problem to WM Z. WM Z joined us in the yard to witness the position of the Turntable Ladder and the cage position. I then elevated the ladder set of the gantry and then rotated and lowered to the ground to have a closer inspection of the cage. At this point we noticed; The cage console securing bracket was bent (right hand side with push button). The left hand lug is positioned differently to the right hand side due to being retro fitted with 4/5 spacers washers. In the cage the left hand hydraulic cover is dented on the top. The cage console has some broken plastic next to the right hand securing bracket side push button lock. I telephoned workshops and reported the issue to C. A workshops engineer was already on route to temple and C said get him to have a look. D from workshops arrived at temple and I reported the issue to him. We removed the cage upon instruction from WM Z to then enable the TL to remain on the run. Upon continuing the Turntable Ladder test without the cage. I noticed at the Turret Console some additional features such as; TESTPIN written across the console screen, additional push button functions such as crane facility and configuration set up. I reported this to WM Z. I was told North Fire had been informed and were on route. A trans 4 was complete but our fax machine would not allow it to be fax to workshops so a copy was forwarded to control for record.</td>
<td>Procedural issue</td>
<td>incorrect stowage of console</td>
<td>Rear frame of cage guides/lugs not locating due to being buckled. Cage console securing bracket bent (right hand side with push button. left hand hydraulic cover dented on the top. Cage console has some broken plastic next to the right hand securing bracket side push button lock.</td>
<td>1,200.00</td>
<td>warning signs added to appliance. Communication s to all operators rehousing console properly</td>
</tr>
<tr>
<td>OSHENS no.</td>
<td>Date</td>
<td>Incident Type</td>
<td>Station</td>
<td>Description</td>
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</tr>
<tr>
<td>3251</td>
<td>2017</td>
<td>RTC</td>
<td>Temple</td>
<td>During initial TL training I was tasked with positioning the TL cage just below the window sill of the training tower in order to simulate a walk down rescue as per standard Procedure. This requires that the cage is bridged against the building so as to offer stability and eliminate movement of the ladder. The cage was lowered slowly and bridging was lightly applied. For training purposes I then utilised the return function which is designed to carry out my previous movements in reverse. However the on-board computer did not repeat my movements as accurately as expected/desired and this resulted in light grazing to the paint on the front of the cage.</td>
<td>Hit something fixed or stationary</td>
<td>Design flaw. TL operators trained to perform a procedure that rests 'bridges' the cage against a building in order to allow us to perform rescues via a 'TL Staircase'. This will inevitably scratch the paintwork as it has done in this case.</td>
<td>Slight scratch to the paint on the front side of the cage</td>
<td>£200.00</td>
<td>Workshops to discuss with manufacturer (add rubber on underside of cages)</td>
</tr>
<tr>
<td>3492</td>
<td>2017</td>
<td>RTC</td>
<td>Temple</td>
<td>Following conclusion of the incident, a check was made of the vehicle, and no damage was noticed. Damage was later discovered on the fibreglass cowling on the base of the turret on 18th May, 2017.</td>
<td>Hit something fixed or stationary</td>
<td>Hit something fixed or stationary</td>
<td>Hit something fixed or stationary</td>
<td>£140.00</td>
<td></td>
</tr>
</tbody>
</table>

Total costs £30,192.00
1. **SUMMARY**

1.1. This report focuses on Energy and Environmental performance in the financial year 2016/17 and also summarises achievements and measures implemented throughout the period of the Carbon Management Plan between 2010 – 2015.

1.2. All performance indicators are showing long-term positive trends including:

- 40% Reduction in Carbon Emissions
- 31% Reduction in Building Energy Consumption
- Improved Building Energy Performance reflected in above average Display Energy Certificate (DEC) Ratings
- 7.4% of total energy demand generated from Renewable Energy Sources
- 50% reduction in water consumption
- 23% reduction in emissions associated with transport
- 74% of Waste Recycled or Recovered.

Whilst positive overall, a recent downturn in performance for both water consumption and travel emissions is noted, and improvement measures to address this have been identified for implementation in the current financial year.

2. **RECOMMENDATIONS**

The Committee is asked to note the report.
3. **BACKGROUND**

The annual report is to be found at the Appendix which is a self contained document to which Members are referred.

4. **CONSIDERATIONS**

4.1. **Contribution to Key Policy Priorities**

a) Environmental Policy and Carbon Management Plan
   *Providing a detailed action plan to deliver against our environmental priorities and risks.*

b) Climate Change Declaration
   *Underpinning our commitment to tackle both the causes and consequences of climate change establishing targets to reduce our CO2 emissions and implementing initiatives to achieve this.*

c) Corporate Plan 2011 – 2015 / IRMP
   *Objectives for 2011 – 2015 and supporting Local Performance Indicators.*

4.2. **Financial Implications**

Medium Term Financial Plan
*Identifying efficiencies and delivering savings in our utility and fuel budgets.*

4.3. **Legal Implications**

None.

4.4. **Equality & Diversity Implications**

None.

4.5. **Corporate Risk Assessment**

None.

4.6. **Environmental/Sustainability Implications**

Key subject matter of the report

4.7. **Health & Safety Implications**

None.

4.8. **Crime & Disorder Implications**

None.
5. **BACKGROUND PAPERS**
   None.

6. **APPENDIX**

7. **REPORT CONTACT**
   Simon Richards, Temporary Property Services Manager, extension 214.
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This report focuses on Energy and Environmental performance in the financial year April 2016 – March 2017, and also summarises achievements and measures implemented throughout the period of our Carbon Management Plan 2010 – 2015.

1. Carbon Emissions

Avon Fire & Rescue Service Carbon emissions
Our Carbon Management Plan (CMP) established a challenging carbon emissions reduction target of 30% over 5 years from a 2008/9 baseline.

In March 2014 we met this target a year ahead of schedule, and following the implementation of the CMP in 2015 we had achieved an overall 35% reduction in emissions as shown in the Figure 1 below.

![Figure 1 – AF&RS Carbon Emissions](image)

A longer term 2020 target to cut emissions by 50% from a 2008/09 baseline has been established in our Environmental Policy. During 2016/17, emissions have fallen by a further 5.1% on the previous year and we are on track to meet this sector leading target.

2. Performance indicators

Environment & Energy Performance indicators have been established to monitor and report on performance trends for Carbon Emissions, Energy Consumption, Renewable Energy Generation and Water Consumption.

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1 CMP available on www.avonfire.gov.uk

2 The scope of reported carbon emissions was originally agreed with the Carbon Trust as part of the development of the CMP and is made up of building energy consumption (gas, electricity & heating oil), metered water consumption, fleet vehicle fuel, & private & lease vehicle mileage claims.
Figure 2 below summarises performance in 2016 / 17.

<table>
<thead>
<tr>
<th>Target</th>
<th>2016 / 17 Performance</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Emissions</td>
<td>5% Reduction on previous year</td>
<td>- 5.1%</td>
</tr>
<tr>
<td></td>
<td>50% Reduction from 2008/9 by 2020</td>
<td>- 40%</td>
</tr>
<tr>
<td>Energy Consumption</td>
<td>5% Reduction Year on Year (total target 25% from 2011/12)</td>
<td>- 31%</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>20% from Renewable sources by 2020</td>
<td>7.4%</td>
</tr>
<tr>
<td>Generation</td>
<td>5% Reduction on previous year</td>
<td>+ 5%</td>
</tr>
</tbody>
</table>

*Figure 2 – Environment & Energy Performance Indicators*

### 3. Energy Consumption

Despite an overall increase in the footprint of our estate, energy consumption in buildings has fallen by 31.2% compared to our baseline year of 2011/12, and is currently 6% ahead of target.

*Figure 3 – Energy Consumption in Buildings*
The reduction in energy consumption (electricity, gas & heating oil) in our buildings was the most significant contributing factor to exceeding the Carbon Management Plan (CMP) target, achieving a saving of approximately £100,000 per annum by the end of the CMP implementation period. We continue to make further reductions to the cost of energy in our buildings year on year.

Key improvements delivered as part of our Carbon Management Plan included:

- Installation of more efficient gas boilers and replacement of oil-fired boilers at the majority of Fire Stations, achieving over 30% reduction in heating energy consumption, reduced reliance on carbon-intensive heating oil & lower boiler maintenance requirements.

- Installation of a Building Management System (BMS) at all whole-time stations and Head Quarters to provide better heating control. This reduced consumption significantly by automatically controlling heating demand according to external temperatures and occupancy, as well as improving comfort levels.

- Trial of LED lighting was undertaken at some sites including Headquarters, Kingswood, Thornbury and Pill, with immediate reductions in consumption and improved lighting levels.

- Trial and installation of a dehumidification system at Bedminster Fire Station to dry Uniform / PPE and water rescue equipment. The use of dehumidifiers rather than providing heating to drying rooms, removes the need to run boilers & heating systems all year round. As a result it is a much more efficient and cost effective solution. This trial provided the business case to roll out this technology to other stations with installation at Kingswood in 2014.

- Installation of a small solar thermal system at Bedminster to pre-heat water in the hot water cylinder, reducing the gas required for heating water, and solar photovoltaic systems at Nailsea, Nova Way and Thornbury. These generated over 70,000 kWh electricity & £16,000 from electricity savings and Feed in Tariff income by the end of the CMP period.
• Installation of smart meters for gas and electricity at a number of sites to enable automated half-hourly meter readings, giving much more detailed insight into energy consumption & opportunities for energy efficiency improvements.

• A range of other measures including voltage optimisation, appliance bay door replacement, replacement of appliance bay heating with frost protection only, IT power management, building and pipe insulation, and electrical equipment control.

Over the past year (2016/17), consumption has risen slightly (+2%) largely due to colder temperatures in November - January when compared to 2015 / 16. This resulted in a significant increase in gas consumption during the winter as shown in figure 5 below.

![Energy Consumption by fuel type](image)

**Figure 5 – Building Energy Consumption by fuel type**

2016 / 17 was also the first winter period in which both the new Temple and Hicks Gate Fire Stations were fully operational.

Only two sites; Lansdown Control and Head Quarters now continue to rely on heating oil to fuel as a primary heating source. Both sites also have very old and inefficient boilers, which account for 15% of our total energy consumption. We anticipate that this will be the last year in which heating oil is used as work is underway to replace the heating system at Lansdown and we will have disposed of the Head Quarters site.

Despite an overall increase in the footprint of our estate, energy consumption per m2 (floor area) shows a continued reduction year on year due to the improvement works across our estate and the energy efficient design of the newly built and refurbished stations.
Building Energy Performance

<table>
<thead>
<tr>
<th>Units</th>
<th>2011/12</th>
<th>2015/16</th>
<th>2016/17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total floor area</td>
<td>m²</td>
<td>24,853</td>
<td>23,191</td>
</tr>
<tr>
<td>Energy consumed by floor area</td>
<td>kWh/m²</td>
<td>262</td>
<td>189</td>
</tr>
</tbody>
</table>

Figure 6 – Building Energy Performance Improvement

3.1. Energy Consumption Measures & improvements 2016/17

Display Energy Certificates (DECs)
It is a statutory requirement for all public sector buildings with a floor area of 250m² or above display an annual certificate showing the energy performance of a building based on actual consumption. We have DECs for 22 of our buildings including ‘proxy’ DECs for our buildings less than 250m² in order to give us a service-wide picture of our buildings’ performance against industry benchmarks.

Current DEC ratings are shown below (this does not include Hicks Gate or Temple which had not been in operation for a complete year by end of 2016/17). The average DEC rating for our buildings is “C “(73), compared to an average “E” (112) in 2011/12³.

Our current performance compares well to the performance of a Typical benchmark building (see figure 7 below).

Drying Rooms
Following successful trials at Bedminster and Kingswood, dehumidifiers have been installed at Avonmouth, Hicks Gate, Temple and Bath Stations during 2016/17. The use of dehumidifiers to dry Fire Fighters Personal Protective Equipment and Water Rescue Equipment is a more efficient & cost effective than providing heat from central boiler plant to drying rooms all year round.

³ In 2011/12, DEC ratings covered only 6 of our buildings as they were only required for buildings above 1,000 m²
Efficient Lighting
A complete lighting upgrade was undertaken at Nova Way, replacing all old and inefficient fittings with high efficiency LEDs, Hi-bay Induction light fittings and motion-detection controls where appropriate.

The new installation should consume 60% less electricity and we project a 25 Tonne cut in CO₂/yr and annual cost saving of £6,500. Maintenance costs will also be reduced.

The total project costs were £34,000 with a projected payback of just under 5 years.

Retained station energy efficiency improvements
A range of improvements were made at Yatton including replacing old electric heaters with more efficient systems, upgrading heating and hot water controls, replacing Appliance Bay fans, replacing all old lighting with energy-efficient LED light fittings, and replacing timers with motion-detection controls on external lighting.

Electricity consumption at the station has reduced by 50% since the works were completed (as shown in the figure 8 below), with an estimated annual saving of £1,000 and a project payback period of just 2 years. The improvements at Yatton will inform an Invest to Save programme to be rolled out across all retained stations during 2017 / 18.

---

**Figure 8 – Yatton Fire Station Electricity Consumption**

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Building Management System (BMS)
Our BMS was extended to include Lansdown, Nova Way, Temple and Hicks Gate Stations, which enables better control of the heating and hot water systems at those sites taking account of external and internal temperatures and occupancy of the buildings. This will further reduce energy consumption as well as improving comfort levels.

Temple & Hicks Gate Fire Stations
Both the new stations opened for operation in 2016 & have been built to very high energy-efficiency standards, exceeding Building Regulation requirements, and in the case of Temple build to a BREEAM ‘excellent’ standard. Both buildings incorporate features such as roof-mounted Solar Panels, the latest LED light fittings & intelligent controls, efficient boilers and heating control
systems, heat recovery systems, water saving devices, bespoke drainage systems to minimise pollution, the highest energy rated appliances and equipment and high levels of insulation.

As with all new buildings there is an initial commissioning period over several seasons, with on-going work to optimise these buildings for maximum efficiency. Both stations are targeting a DEC “A” rating.

### 3.2. Overview of Hicks Gate Fire Station Design Features

- **Only AF&RS fire station with a built in sprinkler system.**
- **Efficient heating controlled by a Building Management System which responds to different heating requirements in different zones of the building.**
- **Low energy lights with a variety of controls such as motion detection so that lights are switched on and off as necessary. Features also include daylight sensitivity so that lights will automatically dim as daylight increases.**
- **Mixed system of natural ventilation, such as fresh air vents, and mechanical ventilation, including fans and air conditioning units. This provides control to building users, whilst ensuring that the heating and air cooling systems can’t be operated at the same time.**
- **Photovoltaic solar panels which will generate an estimated 29,000 kWh electricity per year—that’s equivalent to about 50% of Brislington Fire Station’s annual electricity use.**
- **Automatic leak detection system to reduce wastage.**
- **Specially designed drainage system to allow foam training to take place in the yard.**
- **Cycle store to encourage sustainable travel.**
- **Super-insulation in the walls and ceiling which exceeds Building Regulation standards and very energy efficient windows.**
**Metering & Monitoring**
During 2016/17 an online energy management portal (Digital Energy) was developed in order to collate & manage all energy consumption data which allows us to identify opportunities for improvements & monitor performance. This receives automated feeds from the vast majority of our electricity & gas meters, with meter readings also inputted for heating oil, renewable energy and water consumption. Plans are also in place to incorporate waste and transport data in future.

**4. Renewable Energy**

In line with our new Environmental Policy introduced in 2016, AF&RS has committed to increasing the development & use of renewable energy sources, and established a new performance indicator ‘To generate 20% of AFRS’ total energy demand from renewable energy (on- & off-site) by 2020’.

This equates to a year on year increase of 5% and by the end of 2016/17, we had exceeded this target, with 7.4% of our total energy demand generated from renewable sources both on and off site generation.

![Pie chart showing On Site Generation at 22% and Off Site Generation (Purchased) at 78%](image)

*Figure 9 – AF&RS Renewable Energy Generation*

Generating our own renewable energy contributes to our carbon emission reduction target and future energy security by providing resilience against potential power loss, fuel shortages and supply disruptions.

Other benefits include cost savings as conventional energy prices increase significantly year on year and the income generated from Feed in Tariff (FIT) and Renewable Heat Incentive (RHI) payments for the production of renewable energy is guaranteed for the life of the installation.

**4.1. Measures & improvements 2016/17**

**Solar Photo Voltaic (PV) Installations**
AF&RS now has six solar PV installations on its buildings. Four are retrofitted to existing buildings at Thornbury, Nailsea, Nova Way and Lansdown, and two systems integrated into new build at Hicks Gate and Temple Fire Stations as shown in Figure 10 below.
Figure 10 – Renewable Energy Installations and income

* Jan-Mar 2017 only / ** Aug 2016-Mar 2017 only

Figure 10 also shows the expected annual income for the 6 PV systems from the government’s Feed in Tariff (FIT) scheme which provides payment for all electricity generated and exported back to the grid.

The FIT rates have reduced significantly in the past 12 months for new systems, which explains the lower level of income for the systems installed in 2016. However, AF&RS also benefits from any electricity generated that is used on site is which is free and displaces the cost of electricity that would otherwise be purchased from the grid. Pay back times for the initial cost of the systems ranges from 6-10 years.

Renewable energy generation also contributes to our carbon reduction target with an estimated total saving of 60 tonnes CO₂ per year (a 10kWp system saves approximately 5 tonnes CO₂/yr).

** Solar thermal **
AFRS has one solar thermal system at Bedminster generating hot water. This pre-heats water in the hot water cylinder before the water is heated by the gas boilers, providing approximately 20% of the water heating required – a cost saving of approximately £100-150/yr.

** District heating **
The new Temple Fire Station has been designed with the capacity to link into the district-wide heating scheme planned for the Temple area.

** Renewable electricity supply (off-site) **
Since October 2016, all of Head Quarters electricity has been purchased from suppliers providing a 100% renewable energy supply (from solar & wind farms). This equates to 25% of AFRS’s electricity consumption in the past 6 months.

** Lansdown Control Air Source Heat Pump (ASHP) **
Consultant building engineers have been commissioned to undertake a detailed feasibility & design specification at Lansdown for a new heating system to replace the old, inefficient oil-fired boilers which provide heating and hot water to Control bungalow offices.

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*The power of a PV cell is measured in kilowatts peak (kWp), which is the rate at which it generates energy at peak performance in full direct sunlight during the summer.*
This work is on-going, however initial feedback demonstrates that the most suitable technology for the site (which is not on mains gas), is an air source heat pump (ASHP) system combined with improvements to building insulation & heating controls.

ASHPs extract heat from the outside air in the same way that a fridge extracts heat from its interior & can extract heat in temperatures as low as -15°. They need electricity to run, however this would cost significantly less than the heating oil currently used, & would also substantially reduce CO₂ emissions & maintenance requirements. The system would also be eligible for Renewable Heat Incentive payments (a similar scheme to the Feed in Tariff for solar systems).

5. Water Consumption

Metered water consumption has fallen overall by 50% compared to a 2008/9 baseline. This is largely as a result of improved identification and management of leaks, and a reduction in scheduled vehicle washing on stations.

![Figure 11 – AF&RS Metered Water Consumption](image)

The majority of sites have seen a further reduction in consumption over the last year; however two major leaks at Kingswood and Chew Magna Fire Stations have resulted in an overall increase of 5%. These leaks were identified following abnormally high water bills for those sites and have been resolved in consultation with Wessex Water.

5.1. Measures & improvements 2016/17

Water Data loggers

As the recent leaks highlighted, it is difficult to monitor metered water consumption on our sites as most meters are only read manually every 6 months by Wessex Water for billing purposes. Meters are often located in hard to reach places and can be illegible (e.g. in a roadway or covered in vegetation and sludge). To address this issue & to get a better insight into site by site water consumption, we have commissioned Wessex Water to install data loggers on the water meters at all whole time stations. This will give visibility of real-time consumption data and will identify leaks &
any erroneous consumption immediately via an alert system. By end 2016-17, 4 data loggers had been installed.

**Urinals**
We have started to remove urinals from all stations, replacing them with standard toilets as necessary. A faulty urinal which was constantly flushing was the cause of a significant water leak at Kingswood Fire Station.

**New Build Fire Stations**
At the new Temple & Hicks Gate stations, fittings & fixtures were chosen to reduce water use such as water saving taps and shower heads (using aerators), occupancy sensors to isolate water supplies when bathrooms are not in use and an automatic water leak detection system.

**Vehicle washing**
At the request of the Senior Management Board, new guidance has been issued regarding vehicle washing on stations;

‘Appliances, ancillary equipment & any other AFRS vehicles must be kept clean but will be washed down only when needed & not as a daily routine; and private vehicles are not to be washed on Service premises’

6. **Transport**
Emissions for fleet transport fuel use and business travel (which includes lease, essential and casual car user mileage claims) are currently monitored quarterly. Annual emissions are shown below in Figure 12.

Overall transport emissions fell by 23% during the implementation of our Carbon Management Plan when compared to a 2008/9 baseline. Initiatives included:

- Challenging the use of private cars for business travel resulting in significant reductions and associated cost savings and introducing a range of sustainable travel initiatives including a centralised pool car system.

- Inclusion of hybrid & electric vehicles as pool cars and 2 electric bikes, provided by a local Community Interest Car Club (Co Wheels) as a fully serviced package for short term lease.

- A reduction in the number of staff with access to the lease car & essential car user schemes.

- Replacement & investment in lower emission operational fleet vehicles.

- Improved call challenging, and a change in response to alarms responses.

- Eco-efficient driving training was also integrated into our training to improve the efficiency of the operational fleet
Despite the long term reduction on transport related emissions, the downward trend has reversed in the last 3 years due in part to a recent increase in private mileage claims.

6.1. Measures & improvements 2016/17

**Operational fleet**
With ongoing replacement and investment in the operational fleet, over 75% of our 70 frontline vehicles are Euro 4, 5 & 6 compliant and therefore meet lower emission standards. There are 3 remaining Euro 2 compliant vehicles which are planned for disposal or replacement in 2017.

**Pool cars**
Older pool cars have now been replaced with lower emission city cards and staff are also able to use the local Car Club vehicles (Co Wheels) which include hybrid & electric cars. Over 60 members of staff are now members of Co Wheels.

**Electric vehicle charge-points**
Further electric car charging points have been installed at Bath, Hicks Gate and Temple Fire Stations, funded in part by a regional grant scheme. These are for use by staff and visitors for charging pool cars and their own vehicles.

**Relocation of Head Quarters to Portishead**
A number of travel initiatives have been offered to staff relocating to Portishead including relocation travel allowances, membership of the Avon & Somerset Police Liftshare scheme, 1:1 travel advice sessions & loans for public transport season tickets.
Other measures to support business travel alternatives & more sustainable travel to work have included:

- Development of a transport & travel performance indicator
- The Cycle to Work scheme available to all staff members, which offers tax free bicycles & cycle safety accessories worth up to £1,000. Since the scheme was introduced at AFRS in 2008 over 850 bicycles have been issued.
- Development of a travel plan and initiatives board for Hicks Gate and Temple Fire Stations
- New cycle storage racks & shelters at Bath & Nova Way
- Promotion of cycle to work day and alternative travel options through “travel” breakfasts at Head Quarters
- Free & discounted public transport tickets
- Participation in the annual West of England Travel Survey about staff commuting patterns. This showed 66% of AFRS staff travelled to work by single occupancy car journeys in 2016, which had fallen from 79% in 2015. Those cycling to work stay the same at around 15% but more staff are travelling to work by car share, walking, motorbike, bus & train.

7. Control of Pollution

In line with our Environmental Policy, a range of measures have been taken to prevent pollution of land, water & air from our sites, training support services, and we continue to implement initiatives that reduce the environmental impact of operational response incidents.

7.1. Measures & improvements 2016/17

Hazardous materials
In consultation with Operational Response & Technical Services, our procedures regarding storage and management of firefighting foam, fuel can stock and hazardous substances on Stations have been improved. All stations now have dedicated bunded storage for potentially hazardous materials.

The majority of foam stock is now stored at Hicks Gate which has a bespoke drainage system and discharge consent allowing foam training and storage.

Fuel Management
All fuel tanks have been upgraded to include a fuel management system allowing us to monitor tank levels and fuel delivery into service vehicles.

8. Waste & Recycling
A contract is in place to collect and process general waste and mixed recyclables from each site. Based on average bin weights, the proportion of mixed recyclables is 35%. General waste is then
further sorted for recycling, Energy for Waste incineration and finally landfill, bringing the total proportion of our waste recycled to 74% (20% of general waste is processed into energy in an Energy for Waste Incineration plant with just 6% going to landfill).

Our waste contract provides active support for increasing recycling rates at our sites & the provision of monthly recycling data to improve our reporting in this area.

In addition to the main waste collections, other waste streams include electrical & electronic equipment (WEEE), hazardous waste, interceptor clearance, general skips, batteries, toner cartridges, scrap metal and depolluted vehicles for training; all of which are disposed of in compliance with necessary regulations.

8.1. Measures & improvements 2016/17

Re-use
In line with the waste hierarchy, re-use is prioritised over disposal, so a number of items from Keynsham and Temple Fire Stations were reallocated for use at other stations including kit racking, office furniture and charging reels.

Waste collections
In line with local authority practices, we have reduced the number of general waste collections where possible, with more regular mixed recyclable collections

9. Sustainable Procurement

Over recent years, AF&RS has increasingly integrated the principles of sustainable procurement when we buy our goods, services and works, in order to improve or minimise the impact we have on society, the economy and the environment.

With an annual expenditure (2015/16 figures) of approximately £4.5 million on supplies and services, and £5.8 million on capital projects (new fire appliances, equipment, new build and refurbishment projects), there is significant potential for AF&RS to save energy and resources, support the local economy, small and medium sized enterprises and promote socially responsibility throughout our supply chain.

We can do this by integrating sustainability at the earliest stages of procurement, and ensuring that the tools we use (including Specifications, Tender Documentation, Evaluation Processes, Key Performance Indicators and Contract Management) incorporate sustainability standards and requirements that relate to the potential impacts of the products and services that we buy throughout their lifecycle.

9.1. Measures & improvements 2016/17

New buildings & equipment
Energy-efficiency specifications were integrated into the new build contracts for Temple and Hicks Gate Fire Stations, including on-site renewable energy technologies and electrical equipment. New furniture was sourced from UK manufacturers and where possible, with FSC (Forestry Stewardship Council) certification.

Building Research Establishment Environmental Assessment Method (BREEAM)
Temple Fire Station has been built to a BREEAM “Excellent” standard (which was over and above the requirements established by the Planning Authority). This considers in more detail the lifecycle costs of the building from design, through to construction and the building in use, and sets stringent standards for Materials Specification, Energy, Environmental and Comfort levels, Waste, Use of Natural Resources, Travel and Transport.

10. Environmental Strategy & Management

Underpinning the specific measures taken to reduce the environmental impact of our activities, a range of additional initiatives have been developed to improve our environmental management and to ensure environmental practices are embedded across the organisation including:

10.1. Measures & improvements 2016/17

Environmental Policy and Environmental Management System (EMS)
A new Environmental Policy was produced in consultation with all departments, bringing it into line with local, national & international targets & best practice. This will form the basis for the development of an ISO 14001 compliant EMS over the next 2-3 years.

Environmental reviews
Detailed environmental reviews of all stations commenced in 2016, alongside a survey of all station staff to establish their views, ideas and to identify opportunities for improvement.

Resulting actions have included the service-wide review of foam storage, upgrade of heating & hot water controls at Retained Duty Stations and amendment of the Health & Safety workplace inspections and numerous maintenance issues incorporated into Supplies and Property Services work plans.

Awards
Our environmental improvements have secured us a commendation as a high scoring new entrant in the recent Business in the Community’s Environment Index 2016.

Networking and Collaboration
We have been working with Avon & Somerset Police on potential areas for collaboration such as travel planning and shared sustainability initiatives. AF&RS have also become members of the National Police Environment Group as well as maintaining regular contact with the Chief Fire Officer Association (CFOA) communities for Sustainability, Property Management and Procurement.

We continue to work with Unitary Authorities on Climate Change and Sustainability Strategies across the West of England and have shared best practice with Local Authority colleagues particularly in relation to our new build Fire Stations.

Staff engagement
Various initiatives to involve staff & raise awareness have been undertaken including regular “Bulletin” articles, Cycle to Work and alternative Travel Day events, staff surveys and the development of an interactive building users guide for Hicks Gate building users as part of a “Soft Landings” pilot scheme which focusses on the extended commissioning of the building which incorporates both feedback from building users and also data produced to monitor the performance of the site.
11. Planned measures: 2017/18

A number of initiatives are ongoing and new measures have been identified for implementation in the current financial year. These are summarised in the table below.

<table>
<thead>
<tr>
<th>Energy consumption in buildings</th>
<th>Development &amp; roll-out of a 2-3 year energy efficiency improvement programme, integrated into the wider Property Services capital programme, including: heating controls, lighting upgrades &amp; building insulation. Investigate funding mechanisms e.g. SALIX, EU ELENA &amp; FINERPOL schemes in partnership with other public sector bodies</th>
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<tbody>
<tr>
<td></td>
<td>Installation of dehumidifiers at Southmead &amp; other Whole Time stations to replace central plant heating systems</td>
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<td></td>
<td>As part of the development of our energy management portal, individual site dashboards will be developed so that each AF&amp;RS site is able to keep better track of energy consumption at their site and in comparison with other sites</td>
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<tr>
<td>Renewable energy</td>
<td>As part of the energy procurement process, Bristol Energy will request pricing from suppliers to include renewable electricity supply options, whilst still ensuring competitive tendering, value for money etc. Energy supply contracts are up for tender in Sept 2017</td>
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<td></td>
<td>A service-wide Renewable Plan will be developed at the request of Avon Fire Authority members and as a key part of a Property Asset Management Plan</td>
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<td></td>
<td>Investigation into the use of an Air Source Heat Pump at Lansdown Control to replace old, inefficient and costly oil fired boilers and provide a more reliable heating and hot water supply.</td>
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<td>Water consumption</td>
<td>Competition in the commercial water market is being introduced 2017/18, so any necessary contractual and procurement changes will be made</td>
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<td></td>
<td>Remaining data loggers on Whole Time station water meters will be installed</td>
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<td></td>
<td>Integration of all water efficiency works into the Property Services capital programme</td>
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<tr>
<td></td>
<td>Production of updated drainage plans for each site and integration of all drainage works into the Property Services capital programme</td>
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<tr>
<td>Transport</td>
<td>Development of a service-wide transport &amp; travel strategy to address air quality issues, rising fuel costs and AF&amp;RS’ commitment to reduce carbon emissions. This will cover operational fleet and business travel, to be developed jointly with Fleet and Operations Response</td>
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<td>Expansion of electric and hybrid pool car provision and the installation of additional electric vehicle charging points at AF&amp;RS sites</td>
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<td>Pollution</td>
<td>Technical Services will be undertaking research into non/low fluorine fire-fighting foams in 2017</td>
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<td></td>
<td>The environmental legislation register will be updated and revised to ensure ongoing compliance with legislation, regulations and best practice guidance relevant to our operations &amp; activities</td>
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<td></td>
<td>Detailed drainage plans will be developed for all sites highlighting and potential risk of pollution and required mitigation measures.</td>
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<tr>
<td><strong>Waste &amp; recycling</strong></td>
<td>Work with our Waste Collection Contractor to improve recycling rates through better staff awareness and to aim towards a zero landfill rate e.g. by trialling food waste collection</td>
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<tr>
<td><strong>Sustainable procurement</strong></td>
<td>Plan for the development of a sustainable procurement strategy and policy</td>
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<td></td>
<td>Consider how all major procurements can be assessed for sustainability impact during the supplier selection process</td>
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<tr>
<td><strong>Environmental strategy &amp; management</strong></td>
<td>Continuation of environmental review of all sites &amp; stations</td>
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<td></td>
<td>Progress the next steps towards an ISO 14001-compliant EMS and consider external verification of our systems</td>
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<td></td>
<td>Review the objectives of the Environmental Steering Group and consider integration into broader remit groups such as the Asset Management group to ensure environmental objectives and practices are embedded service-wide</td>
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<tr>
<td></td>
<td>Further networking with other Fire and Rescue Services, Avon &amp; Somerset Police, National Police Environment Group and local authorities</td>
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<tr>
<td></td>
<td>Development of an environmental eLearning module for all staff</td>
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