Item No8

TYNE AND WEAR FIRE AND RESCUE AUTHORITY

MEETING: 25th MARCH 2013

SUBJECT: ENVIRONMENT STRATEGY 2010-15: PROPOSALS FOR THE FUTURE

JOINT REPORT OF THE CHIEF FIRE OFFICER, THE CLERK TO THE AUTHORITY, THE FINANCE OFFICER AND THE PERSONNEL ADVISOR TO THE AUTHORITY

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1 INTRODUCTION

1.1 The purpose of this report is to assess the impact of the Environment Strategy over its first three years, and to seek approval to roll forward capital investment in environmental initiatives for a further two years, 2013-15.

2 BACKGROUND

2.1 TWFRA has a long standing commitment to environmental responsibility and sustainability. The current Environment Strategy was agreed by Authority in March 2010 with a progress update given in November 2011, and focuses on actions the Authority can take to minimize the negative impact of its activities on the environment. The Environment Strategy sits within the Authority's overall approach to helping deliver sustainable communities as set out in the Strategic Community Safety Plan and IRMP.

2.2 The strategy has a practical focus and three key objectives:

- to use natural resources efficiently and reduce overall consumption (with a 22% reduction target in CO2 emissions from April 2010 to March 2015)
- to reduce pollution and waste through our management of operational activities, buildings and fleet
- to promote engagement of the whole organisation in improving our environmental impact, and work with partners to improve environmental sustainability

2.3 In order to identify the most cost effective actions to reduce emissions, TWFRA worked in partnership with other FRAs in the region, the Regional Improvement and Efficiency Partnership (NEREIP) and the Carbon Trust whose technical expertise was invaluable in establishing impact and payback periods for a number of potential actions. Building adaptations were identified as the best investment for the first Action Plan, along with a programme of behaviour change to reduce energy consumption.

2.4 The potential actions were fully costed and the implications taken into account in the Medium Term Financial Strategy and Capital Programme through an earmarked reserve of £509K. Between 2010-11 and 2012-13, this has funded a range of environmental adaptations across the majority of premises, focusing on TWFRA owned assets.

2.5 These include a comprehensive insulation programme; replacement of boilers; LED lighting across our sites; virtualization of servers and the installation of Solar PV at Station 21 (funded by regional grant. This adaptation was not shown to have such a good payback period as other interventions and has therefore not formed a core part of the programme).

2.6 Work was also undertaken to secure more energy efficient engines in the procurement of new fire appliances; other actions have not focused on the fleet though trials have taken place on a number of electric and hybrid vehicles.

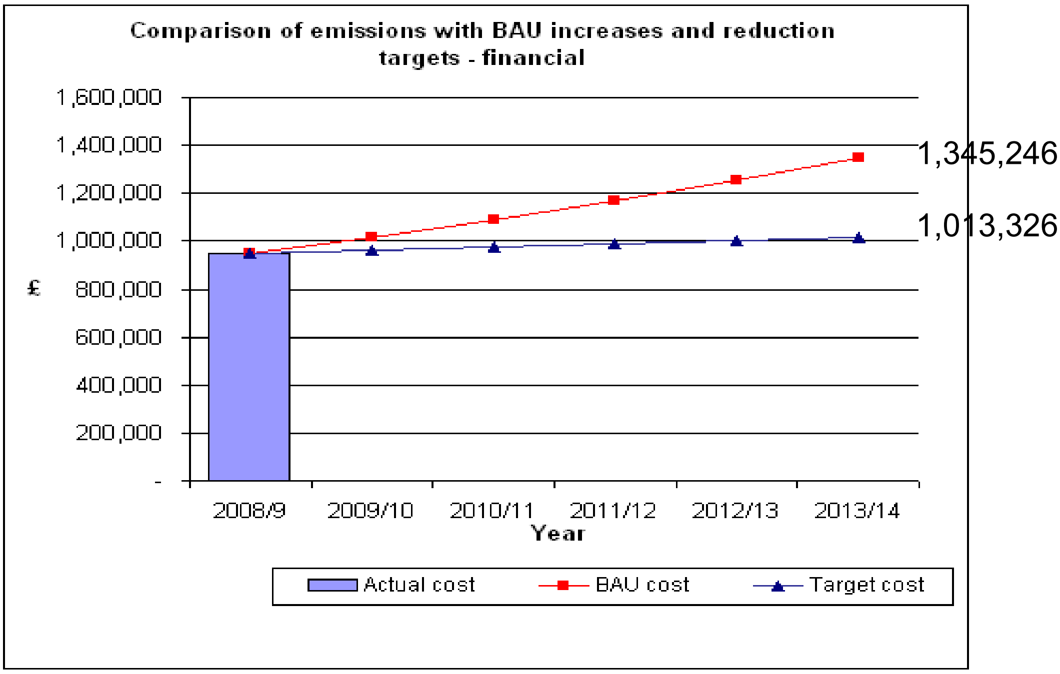
3 IMPACT TO DATE

3.1 The primary focus of the programme is reducing carbon emissions. The table below shows that the Authority achieved a reduction in buildings emissions from 3,545 tonnes in the baseline year, to 2880 tonnes in 2011/12, a reduction of 18.7% representing good progress against the target of a 22% reduction by 2015.

Assets	2008/9 tonnes	2011/12 tonnes	Difference tonnes	Difference %
TWFRA owned stations (11)	1701	1119	582	34%
PFI stations (6)	993	987	6	1%
TSC	193	153	40	21%
HQ/Training Centre	658	621	37	6%
Total	3545	2880	665	18.7%

3.2 This period has also seen a 50 tonne (7%) reduction in carbon emissions from fire appliances. As noted in 2.3, the initial focus has been on buildings and the emissions of the remainder of the fleet and cars used by staff on a casual/essential basis remain broadly the same.

3.3 Another key deliverable from the programme was cost reduction. Analysis of the cost difference between no action and investment in carbon reduction was calculated as part of the decision to go ahead. This is illustrated in the projection below, taken from the Environment Strategy based on work by the Carbon Trust, which estimated a reining in of expected increases in expenditure based on a projected 8.4% increase in fuel costs. The chart shows the difference between projected cost increases if we did nothing (Business as Usual, BAU) and a much shallower increase in revenue costs as a result of capital investment:



3.4 As a result of the actions taken so far, performance has exceeded this, with utilities bills actually decreasing despite significant rises in gas and electricity tariffs. Actual spending on fuel at fire stations only is shown below based on fuel consumption and bills paid.

Cost reductions through energy efficiency based on fuel consumption and tariffs (bills paid)

Year	Gas	Electricity	Total
2008/9	126,000	184,100	
2009/10	100,000	132,600	
2010/11	120,000	117,700	
2011/12	92,400	90,600	
Over 4 years	**33,600**	**93,500**	**127,100**

3.5 This performance is pleasing with the primary aim of reducing emissions being met, accompanied by reduced utility bills proving the concept of the “invest to save” carbon programme, making good use of capital to assist in reducing revenue pressures. Clearly this is very welcome at a time of further revenue reductions.

4 NEXT STEPS

4.1 The current Environment Strategy runs for a further year although the capital earmarked to support it will have been spent (as planned) by the end of 2012-13. The Service will continue the “softer”, behavioural aspects of carbon reduction through the Environment Steering Group and Carbon Champions; however, it is considered that further significant reductions in carbon emissions and energy costs from buildings will not be possible without further capital investment.

4.2 A number of further potential capital investments have been identified which could not be funded through the capital made available to date. These investments would continue to be made on an ‘invest to save’ basis and would provide acceptable payback periods and enable further significant reductions in energy/fuel usage and carbon emissions to be realised, helping the Authority achieve its overall target of 22% by March 2015. The three key areas for investment would be:

- Extension of LED lighting programme across all TWFRA owned buildings
- Rationalisation of non-operational fleet to provide more fuel efficient and cost effective vehicles
- Extension of boiler replacement programme on older sites

4.3 It is suggested that this investment can be supported through realignment of the Authority’s capital reserves as was done in 2010.

LED Lighting

4.5 It is proposed to change all internal and external lighting across the TWFRA owned elements of the Estate to LED units. A number of site specific LED projects have been undertaken to date and the evidence is compelling and would support a more extensive project to cover all TWFRA owned buildings. As an example the LED lighting fitted to the appliance room area at West Denton alone will save the Authority £1,190 per year and produce 7.81 tonnes less of carbon per year.

4.7 The estimated cost to fit internal LED units across the TWFRS owned estate would be £227,000. The estimated payback period for TWFRA owned premises would be 3 years for external lighting and 2 years for internal lighting based on current data with significant reductions in carbon emissions. The estimated cost is the top end figure and includes sites such as Marley Park and Rainton Bridge which could be fitted with LED Lighting as an element of a new build or conversion programme and this could be agreed at design stage. This project would be delivered by Estates Department staff under the guidance of the Environment Steering Group (ESG) and would not require any external contractors thus reducing the overall cost.

4.8 Each LED unit requires approximately 40/45% less energy than conventional lighting, carries a 5 to 7 year warranty and has a life expectancy of 80,000 to 100,00 hours which significantly reduces maintenance costs including parts and plant hire. The carbon reduction figures are extremely attractive and we would be expecting reductions of hundreds of tonnes per year.

Vehicles

4.10 Further reductions in emissions from the fleet may be expected from 2013 following the completion of the ongoing White Fleet review, which is being carried out based on the outcomes of the Back Office Review in terms of reduced staff.

4.11 The Environment Strategy will need to be refreshed from 2014-15 and it is suggested that at this time the focus on vehicle emissions should become more central, making use of the Green Fleet Review which was undertaken when the Strategy was developed.

4.12 The improvements in technology over recent years and the availability of supporting research has identified measurable benefits in the use of electric vehicles and also applications of hybrid technology. Members will be aware that a number of electric and hybrid vehicles have been trialled and a vehicle charging point has been sited at SHQ.

4.13 Rationalisation of the non-operational fleet over the coming years will present opportunities to invest in more fuel efficient and cost effective vehicles and this could be a combination of full electric, purpose built hybrid or retro-fit hybrid. This investment could also include provision of further ‘charging points’ at key sites. It is proposed to set aside £80K to enable investment in making the fleet more energy efficient over the coming years, taking advantage of developments in technology to secure best value.

Boiler Replacement

4.14 New heating systems and boilers have formed a core part of the programme so far with energy efficient boilers installed at Stn W Birtley, Stn E Gosforth, Stn G Wallsend and Stn N Millfield, with immediate impact on carbon emissions and costs and a payback period of 8 years.

4.15 All heating systems will progressively deteriorate and become notably inefficient after 10/15 years. It is proposed that sufficient funding is made available to install energy efficient boilers in the remaining TWFRA owned stations (excluding West Denton since any refurbishment of this works to this site are included in the capital programme to tie in with the replacement of the Command and Control system), at an estimated cost of £200K.

5 MANAGEMENT OF THE PROGRAMME

5.1 Spending relating to this programme will be managed alongside all other capital projects through the Asset Management Group. The Environment Steering Group (ESG) will continue to provide an effective forum for discussion, debate and ultimately decisions relating to the best investments for reductions in carbon emissions and energy expenditure. The ESG has also acted as an effective ‘project board’ to successfully oversee delivery of key projects to date.

5.2 It is proposed that the ESG continues to provide the key role detailed in 5.1 and consequently the group would provide the necessary guidance and leadership to ensure the effective management of budgets and projects.

5.3 The group has also promoted energy efficiency through the ‘Carbon Champions’; who have helped achieve positive behavioural change which has helped reduce our carbon footprint.

6 LEGISLATIVE IMPLICATIONS

6.1 At present there is a legislative requirement / mechanism to record organisation utility use / emissions. It is also expected that, in the future the national Carbon Reduction Commitment (CRC) threshold limits may be lowered which will place further requirements upon smaller organisations currently exempt, including TWFRS.

7 ICT IMPLICATIONS

7.1 Effective use of ICT impacts positively on the carbon footprint and energy consumption of the service. A number of current and future activities within the ICT strategy and development programme, including the consolidation of servers, will assist with the delivery of this Strategy.

8 FINANCIAL IMPLICATIONS

8.1 This report seeks approval to refresh the earmarked Carbon Management Plan Reserve by setting aside £507K to cover the period 2013-15. Projected spending is as follows:

Year	**Capital**
2013/14	£80,000 – investment in more fuel efficient/cost effective vehicles £227,000 – Extend LED lighting across the estate – may be delivered across two financial years
2014/15	£200,000 – Boiler replacement on older sites

9 EQUALITY & FAIRNESS IMPLICATIONS

9.1 There are no equality and fairness implications envisaged in respect of this report.

10 RISK MANAGEMENT IMPLICATIONS

10.1 Although good progress has been made in reducing our carbon footprint with associated financial savings, there is a risk that further progress will be limited by lack of further investment.

10.2 Investing capital to save revenue assists in mitigating our corporate risks relating to reduced revenue budgets under the Government's Spending Review. From a business risk perspective this is low risk with payback guaranteed with attractive timescales.

11 HEALTH & SAFETY IMPLICATIONS

11.1 There are no health and safety implications envisaged in respect of this report.

12 RECOMMENDATIONS

12.1 Members are requested to:

I. Note the progress made in delivering the Environment Strategy
II. Approve further capital investment in carbon reduction initiatives as set out in section 8
III. Receive further reports as required

BACKGROUND PAPERS

The under mentioned Background Papers refer to the subject matter of the above report:

- Environment Strategy
- Carbon Trust – Carbon Management Plan
- Commitment and Guiding Principles for Environmental and Sustainable Improvement
- Energy Saving Trust – Fleet Review