

Agenda Item 7

GREATER MANCHESTER FIRE AND RESCUE AUTHORITY

EMERGENCY RESPONSE COMMITTEE

17 JANUARY 2013

Subject: DV 26 – FUTURE FIREFIGHTING UPDATE AND DEMONSTRATION

Report of the County Fire Officer & Chief Executive

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PURPOSE OF THE REPORT

The purpose of this report is to inform Members of the Emergency Response Committee of the progress made to date with Development Goal (DV) 26 - *“Research and where appropriate, develop and implement new or revised firefighting procedures, equipment and techniques with the aim of improving our firefighting capabilities and public and firefighter safety”*. This DV is now more commonly referred to as “Future Firefighting”.

A practical demonstration of the planned new techniques will be delivered during a recess of the ER Committee meeting on the 17th January 2013.

This report and the associated demonstration are intended to give Members clarity as to the planned Future Firefighting techniques and associated equipment and procedures and the benefits that will be delivered. It is also intended to secure continued support for the direction of development and awareness of the relevant financial support required.

EXECUTIVE SUMMARY

1. Through the Integrated Risk Management Planning (IRMP) process we identify the necessary or opportunistic actions the organisation should take to mitigate the risks identified. Due to the limitations in traditional Firefighting techniques, combined with changes in building designs such as new construction methods and modern materials, etc., Firefighters and the public face associated risks which come with rapidly escalating fires, very high temperatures, irrespirable atmospheres, complex escape routes and rapidly deteriorating circumstances. We have researched the Fire Service and Fire Industry arenas, the associated suppliers and markets and other associated stakeholders and have developed a Future Firefighting approach and strategy which combines the utilisation of different equipment,

procedures and techniques which will improve Firefighter and public safety and reduce fire damage and environmental impacts. The introduction of these Future Firefighting techniques will not only produce professional efficiencies and effectiveness which should reduce the fire damage impact to our community and the environment, but should enable us to deal with incidents more quickly and potentially with a lower level of resource response. This will all be described in this paper and demonstrated during a recess in the meeting.

INTRODUCTION/BACKGROUND

2. Members will recall that during the Corporate Planning process for 2012-2015 a new Development Goal (DV) was introduced. This was DV 26.
3. Our proactive IRMP processes cause us to 'horizon scan', monitor relevant advances in the national and international Fire Service arena, assess changes in the built environment, changes in industrial techniques and a whole range of other external influences which may affect the environment our Firefighters may find themselves working in.
4. The development of many different modern methods of building construction, combined with the lower number of operational incidents and the continuing instances of members of the public and Firefighter injuries and deaths at incidents had led us to review our firefighting techniques, equipment and tactics in a fundamental manner.
5. This review encompassed on-going developments nationally and internationally in firefighting techniques. We have learnt that several brigades across this country have trialled Cold Cutting/Ultra High Pressure units (often in isolation or simply as a cutting tool) but seem not to have developed their use for firefighting in any significant way; other than Northamptonshire FRS. They have now retro-fitted CC/UHP lances on nearly all their first appliances and have a wealth of experience and successful insights into the use and benefits of their lances.
6. Our research into such techniques was most impacted by what we learnt in Sweden. They have developed in a range of techniques over approximately a 15-20 year period (first tactical ventilation, then use of CC/UHP lances and latterly thermal scanning). This research has led us to a point where we are now taking the next steps and running operational trials, testing and research and development and developing our requirements and specifications in readiness for future procurement of equipment and the delivery of appropriate training.

CURRENT POSITION

7. The Future Firefighting Project Initiation Document (PID) has been approved and the potential costs for implementation identified. Formal budgetary approval will be sought from the Fire Authority during February 2013.
8. Future Firefighting is intended to develop a combination of methods which, when utilised together, will provide an alternative means of Firefighting to those generally employed today including:
 - A means for the Incident Commander to locate and identify the seat and spread of fire and the fire development by the use of a Thermal Imaging Scanner
 - A means of attacking the fire quickly and safely using Cold Cutting Ultra High Pressure branches (CC/ UHP) initially from outside of the building then supplementing and/or replacing with more traditional firefighting tactics if and when required
 - A means of improving environmental conditions internally by the evacuation of fire gases through the use of positive pressure ventilation (PPV) fans
 - A means of providing “hands free” helmet borne thermal imaging for Breathing Apparatus wearers entering smoke
 - A means of communicating the conditions and interventions on the incident ground via effective integrated video and audio links including where possible the ability to view images outside of the hazard area viewed by crews committed inside
 - A means of securing Thermal Imaging and High Definition images around and above a building and ultimately within the building
 - In the longer term - provision of replacement Personal Protective Equipment (PPE) to support firefighters in the delivery of the interventions listed above
9. Significant progress has already been made in a number of areas referred to above:
 - A team has visited Sweden to see how the combined Future Firefighting techniques are used and learn from the Swedish Firefighters’ years of experience
 - Funding for further research, which will fill the research gaps we have identified, has now been secured and research has been commissioned by the Fire Protection Association into the survivability of people and firefighters who are in compartments when CC/UHP is used
 - A CC/UHP test rig has been procured and fitted to a vehicle and has allowed us to run practical trials to ensure we understand how to use the equipment most effectively and to its optimum capability

- A portable demonstration unit (in which we can create real fire conditions) has also been procured so that we can show operational crews and other interested parties how the CC/UHP operates and how effective it is
 - A large number of PPV trials have been completed and we are now ready with a specification for a new PPV unit
 - We have sourced Thermal Imaging Scanners and are currently trialling them to assess which is most effective and provides the best value
 - We have built the capacity to train operational personnel in the Future Firefighting techniques and use of PPV into the second half of the 20123-2014 training year
 - We are continuing to work with suppliers to identify suitable Thermal Imaging and Communication equipment as well as PPE for delivery in the medium to longer term
10. Following the Emergency Response Committee meeting on the 17th January 2013 a demonstration of the combined use of the Thermal Imaging Scanners, CC/UHP and PPV will take place on the training yard at the Training and Development Centre (TDC). The demonstration will show how the Thermal Imaging Scanners are used, how effective the CC/UHP is in a number of different scenarios utilising both the demonstration unit and the Heat and Smoke facility at TDC and finally how the PPV will be used.
11. During the demonstration there will be the opportunity to ask questions and following the demonstration we will return to the Conference Suite at TDC where further questions and discussion can continue.

OPTIONS/ALTERNATIVES

12. The main alternative to the introduction of Future Firefighting is to continue with the equipment and procedures we currently have and not adopt the new methods. This would in reality mean very slow evolution of firefighting practices; simply replacing equipment with the newer versions as kit wears out, etc. However, this would not allow for the advancements in professionalism, improvements in Firefighter safety and reductions in fire damage losses that should be delivered if we progress with the Future Firefighting Project.
13. Throughout Fire Service history there has been evolution at a slow pace and then occasional revolution in an approach. This often follows a negative incident, such as Firefighter fatalities. Such previous advances have been the introduction of equipment such as BA, BA Guidelines, BA Entry Control Boards, radio communications and telemetry, Hosereel tubing and also the introduction of techniques to deal with flash-overs and backdraughts.

14. We wish to make a revolutionary advancement in firefighting techniques which delivers the benefits previously mentioned; but as a proactive measure without needing to wait for a tragic inspiration.

PREFERRED OPTION

15. The preferred option would be to secure approval for continuation with the Future Firefighting Project and the associated, necessary budget to enable the project team to proceed with DV 26 and realise the benefits listed at 8 above.

CONSULTATION

16. Consultation regarding the project is ongoing with the County Fire Officer & Chief Executive and the Assistant County Fire Officer (Emergency Response) who are the project sponsors, the project Stakeholder Group and Authority Members via the Emergency Response Committee.
17. If continued support is attained the consultation process will be widened and will also include appropriate consultation with the Fire Brigades Union; through inclusion in consultation on the DV goal and also through the Joint Health & Safety Committee.

RESOURCES IMPLICATIONS

18. a) Financial and Procurement

The potential capital commitment for necessary equipment and vehicle adaptations to implement Future Firefighting is £3,402,000. This relates to the provision and fitting of CC/UHP equipment, helmet mounted communications and Thermal Image Scanners to all first appliances, appropriate capacity PPV fans to all first and second appliances, remotely controlled airborne cameras on the Operational Support and Incident Command Units and remotely controlled un-crewed vehicles to allow access to high risk areas.

It should be highlighted that providing alternative and improved Firefighting techniques and equipment will deliver other savings. For example, if one firefighting medium is used (e.g. CC/UHP) other equipment is not used, damaged or needed in the same quantities. Other equipment such as radio communications and PPV equipment needs replacing and improving regardless of this DV goal. If fires are dealt with more efficiently and in a quicker time frame, relevant efficiencies are made and, most importantly, there is an improvement in Firefighter safety, public safety and a reduction in fire damage losses.

b) Human Resources (including Equality & Diversity Implications)

An initial EIA will be completed and if necessary a full EIA; although at this stage there are no apparent equality or diversity implications.

c) Legal and Constitutional

No issues have been identified at this stage. Appropriate financial regulations will be utilised with regard to procurement, etc.

d) Health & Safety

Health and safety risk assessments will be required across the whole range of operational procedures required to implement Future Firefighting.

e) Sustainability

It is anticipated that use of Future Firefighting techniques will allow more rapid intervention and cooling of fire gases, with the resultant reduction in fire damage to property whilst using less water than is currently the case. Appropriate considerations will be given in designing the training courses and training facilities for Future Firefighting; but any environmental impact caused would be massively outweighed by the benefits gained through application of the techniques in the operational arena.

RECOMMENDATIONS

19. Members are asked to note the current position with regard to DV 26 and to raise any questions during and after the equipment demonstration on the 17th January 2013.
20. Members are requested to support the ongoing delivery of DV goal 26 as described in the report and as shown in the demonstration and support the identified budgetary requirement to put the equipment, procedures, training and training facilities in place to deliver this Future Firefighting Project.

STEVE McGUIRK
COUNTY FIRE OFFICER
& CHIEF EXECUTIVE

There are no background papers to this report within the meaning of Section 100D of the Local Government Act 1972.

S. McGuirk
(Proper Officer)
4.1.13