

REPORT REFERENCE NO.	RC/17/10
MEETING	RESOURCES COMMITTEE
DATE OF MEETING	15 NOVEMBER 2017
SUBJECT OF REPORT	WATER MISTING SYSTEMS
LEAD OFFICER	Director of Finance (Treasurer)
RECOMMENDATIONS	<i>That the budget transfer from the Comprehensive Spending Review earmarked reserve to the Revenue Budget for 2017/18 to support the roll out of Water Misting Systems as outlined in paragraph 3.4 of this report be approved.</i>
EXECUTIVE SUMMARY	<p>Water misting is a relatively new technology that provides operational firefighters with another method of attacking fires. It is particularly effective in dealing with compartment fires from a defensive position (i.e. without committing personnel into significantly dangerous conditions) and for attacking fires in voids and difficult to access areas such as crawl spaces, ventilation ducts, thatch, etc.</p> <p>Numerous trials have taken place within the Service and whilst on trial this equipment has been used successfully at live operational incidents. Introduction of this equipment will support the Service objectives and the tiered approach to operational deployment. It will also support the strategic principles identified in the Integrated Risk Management Plan (IRMP) to further mitigate the key fire related risks facing the communities of Devon and Somerset.</p> <p>The Service is already working closely with other Fire and Rescue Services in the Network Fire Services Partnership (NFSP) that use this technology and are developing new ways of working to further support public and staff safety.</p> <p>The original specification for Rapid Intervention Vehicles (RIV) included funding for water misting tools which is already included in the budget.</p>
RESOURCE IMPLICATIONS	As outlined in the report
EQUALITY RISKS AND BENEFITS ANALYSIS (ERBA)	Not applicable
APPENDICES	None
LIST OF BACKGROUND PAPERS	None

1. **INTRODUCTION**

- 1.1 Devon and Somerset Fire and Rescue Service has in the past predominantly provided Service Delivery resources focused on standardisation rather than being driven by local need or the Integrated Risk Management Plan (IRMP) requirements.
- 1.2 A full Service Delivery review was undertaken between June 2009 and June 2011. The review examined a range of appliances/equipment against a range of risk factors and modelled a number of possible appliance distribution scenarios against the Emergency Response Standards (ERS).
- 1.3 Moving away from the 'one size fits all' approach of Medium Rescue Pumps (MRPs) created the opportunity and potential for the development and introduction of smaller lighter appliances that will be equipped to deal with the risks faced in all areas of Devon and Somerset.
- 1.4 The Integrated Risk Management Plan recognised the fact that risk and demand were changing and there were significant variations across the Service. It also acknowledged that the ability of crews (especially those at quieter retained stations) to maintain competence across the very broad range of incidents that we may attend and for incidents they were unlikely to attend is becoming increasingly difficult. In addition, evidence suggested that most equipment carried on our frontline fire appliances was rarely, if ever, used.

2. **BACKGROUND**

- 2.1 The tiered approach is predicated on a principle that all staff are trained and equipped to deal with the types of incidents that they are most likely to face on a day to day basis (Tier 1), based on our analysis of risk and demand. Beyond that the Service has provide enhanced levels of support (Tiers 2 and 3) strategically located across the organisation, again based on risk and demand.
- 2.2 Water Misting Systems offer a solution that supports Tiered Response and enhances firefighter safety. With ever-changing building construction and security, water misting systems will enable the organisation to offer an alternative way to effectively deal with compartment fires using an external alternative to existing firefighting techniques. The benefits of implementing a water misting system prior or in place of current procedures include:
- Suppression of the fire;
 - Greatly improves conditions;
 - Reduced potential of Backdraught/Flashover;
 - Significant reduction in temperature;
 - Increased vision; and
 - Improves survivability for casualties.
- 2.3 This will enable the teams to carry out their tasks in a more efficient and or effective and safe manner. It could also reduce the time required for the wearer to be exposed to the conditions.

- 2.4 The proven operational efficiency of these systems would provide further efficiencies at incidents. With Devon & Somerset Fire & Rescue Service appliances reducing in size and water capacity, the water misting system has low water consumption rates.
- 2.5 With less resources required at the scene, a higher level of cover could be maintained throughout the wider service area. This in itself would be an increase to public safety and make Devon and Somerset a safer place.

3. **FINANCE**

- 3.1 The Outline Business Case for this project identified four options for Water Misting Systems. The preferred option for the Service was for the full roll out of a system that was not ultra-high powered.
- 3.2 The Water Misting Systems units will be implemented to pumping appliances (set A) and Aerial appliances/Incident Support Units (set B) in two formats:

Set A

- Two water misting tools – 1 x Restrictor spray pattern, 1 x Attack spray pattern
- One hammer with spike for penetration through lightweight building materials
- An 18v Makita SDS drill with 20mm masonry drill bit (available from a separate supplier)
- Wood beaver drill bit
- SDS adapter

Set B

- Three water misting tools – 2 x Restrictor spray pattern, 1 x Attack spray pattern
- One hammer with spike for penetration through lightweight building materials
- 10m extended hoses for the 3 nails
- 1 x manifold to connect all 3 nails in a controllable manner if required

- 3.3 The planned distribution is as follows:

Set Type	Unit No's.	Location
Set A (including Makita SDS drill)	117	Appliances
	5	Light Rescue Pump Reserves
	8	Reserve appliances
	4	Academy
Set B (no drill required)	6	Aerial appliances
Total:	140 units	

3.4 The initial expenditure would be:

Set e	Contents	Unit No's.	Cost (per unit)	Total
Set A	Nails	134	£560.00	£75,040.00
	Hammer	134	£145.00	£19,430
	Makita 'SDS' Drill	134	£314.60	£42,156.40
Set B	Nails/manifold/hose	6	£1071.55	£6,429.30
	Hammer	6	£145.00	£870.00
Total:		140 units		£143,925.70
Less approved Rapid Intervention Vehicle funding:				£48,420.00
Total Funding required:				£95,505.70

3.5 The figures are based on equipping every first appliance and aerial appliance as shown in paragraph 3.3 above. Funding of £48,420 has already been approved for 45 sets to be fitted onto Rapid Intervention Vehicles over the coming 3 year period 2017-2020. The remaining cost of the delivery of this proposal in terms of new funding is £95,505.70.

3.6 This simplistic and robust design needs limited maintenance to maintain a long lifecycle. The tender includes training being provided to a limited number of Devon & Somerset Fire & Rescue Service employees by the supplier. This 'Train the Trainer' training will form the basis of the cascade training then supplied to end users by the implementation team (Response Support). Further consultation with the training academy could increase the costs to delivery should the organisation decide that formal training be appropriate.

- Approximate costs 1 x WM to deliver training during shift or On-Call drill session. This has the potential to increase the costs relative to the example (1 x 84stn x 4hrs x £16.78=£5700)
- To achieve this procurement, additional revenue budget will have to be approved within the 2018/2019 budget cycle or funds allocated from an ear marked reserve.

3.7 As this is a new requirement for equipment, approval for a budget transfer is sought to support the project.

4. **CONCLUSION**

4.1 The following outcomes will be achieved by the introduction of water misting systems.

- Have sufficient equipment available to enable crews to safely deal with a high proportion of incidents by utilising an inventory aligned to the findings of the strategic asset review and the integrated risk management plan (IRMP);
- Rationalised levels of equipment; by alignment of the inventory required to findings of the Integrated Risk Management Plan;
- Improved efficiency through better use of resources; by alignment to the IRMP recommendations; and
- Better matched resources to risk; by alignment to the IRMP recommendations.

4.2 The following outcomes will not be achieved solely by introducing water misting systems but is an integral element of the introduction of Tiered Response and Rapid Intervention Vehicle project.

- Reduced establishment at all On Call stations; however with a crewing policy change appliances could be mobile without waiting for 5 personnel
- Improved availability; however with a crewing policy change appliances could be available for more of the time.

4.3 The introduction of water misting systems directly supports the Service key priorities specifically around firefighter safety. The service is investing in alternative vehicles and equipment to meet the needs of the Service plan. With a continued drive towards alternative crewing solutions this equipment will support and enhance options that are being considered. Approval is therefore sought from the Resources Committee to enhance the revenue budget for 2017-18 by £95,500 from funding held within the Comprehensive Spending Review earmarked reserve.

AMY WEBB
Director of Finance (Treasurer)

