

REQUEST FOR DEPUTY MAYOR FOR FIRE AND RESILIENCE DECISION – DMFD216

Title: Procurement of Misting Lance Technology

Executive summary:

The London Fire Brigade (LFB) does not currently carry equipment on front line appliances specifically designed to deal with fires occurring inside construction voids within buildings. This omission in LFB's tactical capability presents a risk for uncontrolled fire spread within voids, thus presenting additional risk to both public safety and to firefighter safety at incidents. This decision requests the approval of the Deputy Mayor for Fire and Resilience to authorise the London Fire Commissioner (LFC) to commit capital expenditure of £242,714 for the purposes of purchasing misting lance technology and associated equipment and ongoing revenue expenditure of £10,980 per annum for maintenance costs.

The London Fire Commissioner Governance Direction 2018 sets out a requirement for the London Fire Commissioner to seek the prior approval of the Deputy Mayor before "[a] commitment to expenditure (capital or revenue) of £150,000 or above as identified in accordance with normal accounting practices...".

Decision:

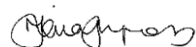
That the Deputy Mayor for Fire and Resilience authorises the London Fire Commissioner to commit capital expenditure of £242,714 for the purposes of purchasing misting lance technology and associated equipment and ongoing revenue expenditure of £10,980 per annum for maintenance costs.

Deputy Mayor for Fire and Resilience

I confirm that I do not have any disclosable pecuniary interests in the proposed decision.

The above request has my approval.

Signature:



Date:

22/01/2024

PART I – NON-CONFIDENTIAL FACTS AND ADVICE TO THE DEPUTY MAYOR

Decision required – supporting report

1. Introduction and background

- 1.1. Report LFC-23-097y to the London Fire Commissioner (LFC) explains that the London Fire Brigade (LFB) operates in one of the most complex built environments in Europe. Frontline operational effectiveness can often depend upon the rapid deployment of firefighting equipment at scale, to mitigate against the growth of fire at an incident. This is recognised as a risk in LFB's Corporate Risk Register (Risk OD1 – the increasing complexity of the built environment increases the risk to our communities and firefighters. This impacts the LFB's ability and capacity to identify and mitigate hazardous factors in the built environment, for both new and legacy stock through Protection and Response activities). It was also recognised as a gap in capability in the Delivery Plan (Programme 3) for Community Risk Management Plan (CRMP).
- 1.2. The proposal supports the Response section of LFB's CRMP by "continuing to make improvements in our capabilities to respond to London's highest risks by upgrading and introducing new equipment and training".
- 1.3. LFB does not currently carry any equipment on front line appliances specifically designed to deal with fires occurring inside construction voids within buildings. This omission in LFB's tactical capability presents a risk for uncontrolled fire spread within voids, thus presenting additional risk to both public safety and to firefighter safety at incidents. The proposal to provide misting lance technology to every pump ladder appliance means that LFB will be able to provide a better response in these situations.
- 1.4. The 'systemic failure' in the construction sector identified by Dame Judith Hackett (Independent Review of Building Regulations and Fire Safety) indicated that there is real potential for incorrect fire stopping in voids in some modern buildings.
- 1.5. LFB recognises that all buildings, regardless of age, are vulnerable to breaches in compartmentation due to damage, lack of maintenance and/or poor trade installations. Systemic failures in architecture or maintenance have resulted in incidents that have contributed to firefighter injuries and in some cases firefighter death.
- 1.6. LFB accident investigators have recommended that both equipment and training for firefighters are reviewed, to consider suitability for tackling void induced fires.
- 1.7. London's built environment presents the challenge of unseen fire spread; this is due to several factors including:
 - Older building stock and those subject to multiple renovations or conversions under different building regulations, as these can present breaches of compartmentation and/or fire stopping.
 - More modern buildings which are more vulnerable to unseen fire spread, due to poor standards of construction.
 - Buildings made vulnerable to unseen fire spread, due to lack of maintenance and/or post-construction alterations, including the installation of utilities.
- 1.8. The number of compartmentation issues identified from Senior Fire Safety Officer (SFSO) reports in 2022 was 178, and therefore this can be regarded as a foreseeable risk.

Fires involving roofs. On average the LFB attends 100 fires a year where roofs are involved. Nine incidents are recorded where voids are directly involved, and 83 where fire has spread to roofing through gaps or voids.

Fires involving properties with cladding. The LFB has attended over 50 fires involving cladding materials in the past two years. The catastrophic impact of uncontrolled fires in clad buildings is universally recognised.

- 1.9. LFB's current initial response option is to cut open the building façade to expose the void, using saws, Halligan bars, or small tools, then applying water from a hose reel jet. Without misting lance technology, LFB currently does not have a suitable solution to provide operational incident commanders with a means of early intervention to deal with this type of risk.
- 1.10. Misting lance technology uses a high-pressure system to deliver finely dispersed water droplets into the fire compartment from the outside. A small opening is made into the compartment wall from the outside using power tools such as combi drills, then water mist is applied through the hole using a lance.
- 1.11. The application of the water mist system allows firefighters to suppress the fire conditions, without the need to fully open the compartment or void. In addition to fires within hidden voids, the equipment has other associated uses including fire suppression within commercial ducting, vehicle engine compartments, roof voids, basement fires, and supporting wildfire firefighting tactics.

2. Objectives and expected outcomes

- 2.1 Misting lances are a well-established and proven technology used within Fire and Rescue Services (FRS) both domestically and internationally with similar built environments to London. Merseyside, Leicestershire, and West Yorkshire FRS all carry misting lance technology on their front-line appliances. Hampshire and Isle of Wight, Cambridgeshire, Devon and Somerset and Kent FRS' also use misting lances and the technology is used in Brussels and Prague and fire services in the United States.
- 2.2 Three options were considered to utilise misting lance technology:

Option 1 is to do nothing and has no costs but does not address the risks or LFB's gap in capability;

Option 2 is to provide misting lances on every pump ladder appliance at a cost of £242,714.00; and

Option 3 is to provide misting lances on every pump appliance on multi-appliance fire stations at a cost of £169,946.00.
- 2.3 LFB considers option 2 to be the best option, as this provides operational incident commanders with the available specialist equipment to support and deliver on their tactical plans, in the earliest stages of a developing incident and it ensures that the provision of misting lance capability is not affected by the availability of pumps.

Benefits of Misting Lance Technology

- 2.4 The provision of misting lance technology will have a direct benefit to the health and safety of firefighters by limiting their exposure in the fire compartment. Limiting time in the fire compartment will lower the exposure to heat and the inherent hazards of compartment firefighting.
- 2.5 The level of exposure to contaminants and products of combustion would be reduced as the firefighters using the misting lances would be away from carbonaceous material.
- 2.6 Using misting lance technology will reduce water damage to buildings from firefighting, as the lances provide a mist of high-pressure water at low quantity.

- 2.7 Equipping fire appliances with misting lances will enable the provision of an immediately available firefighting capability for duct, void and cavity incidents.
- 2.8 Using this technology will create efficiencies by reducing the time in attendance at incidents and increasing/returning resource availability into the mobilising system. LFB will create a comparative report to measure current time at incidents in roofs and voids with post introduction.

Alternative uses

- 2.9 FRSs have also realised additional uses for misting lance technology, utilising the technology at incidents involving bin stores, bin chutes and vehicle fires (cars and vans in the load/luggage area and engine compartments).
- 2.10 Reports from Merseyside, Leicestershire and West Yorkshire FRSs have indicated reductions in time spent in attendance at incidents, as well as reductions in the quantity of water and resources required to safely resolve operational incidents.
- 2.11 Misting lance technology is also used by other fire and rescue services in the wildfire arena. The advantages of deploying misting lances in addition to percolating ('holey') hose, has previously been effectively demonstrated to LFB by the NFCC Wildfire leads from Northumberland Fire and Rescue Service.
- 2.12 Misting lances produce a fine spray at high pressure, using a minimal volume of water, therefore are considered an excellent option for use on wildfires.
- 2.13 Misting lances can create an increase in the humidity of dense vegetation, preventing fire spread through vegetative fuels. When deployed at scale, the technology can also be used for applying water to deep seated fires, as the lance can be driven into the ground, accessing fires and cooling fire gases beneath the soil surface.
- 2.14 The addition of the misting lance capability will introduce a new tactical advantage for efficiently creating firebreaks in deep seated wildfires. This will improve LFB's capability to respond to wildfires in line with organisational learning outcomes identified in the 2022 Major Incident Review, Extreme Weather Period.

Costs

- 2.15 The total costs for the introduction of misting lances include the procurement of supporting equipment such as combination drills, and the development of a computer-based training package for all station-based staff, and level 1 and 2 operational incident commanders.
- 2.16 The proposed capital expenditure is £242,714 and there will be an ongoing revenue requirement for maintenance costs of £10,980 per annum. The costs of this project will be met from the drawdown of the CRMP reserve.

3. Equality comments

- 3.1 The LFC and the Deputy Mayor for Fire and Resilience are required to have due regard to the Public Sector Equality Duty (section 149 of the Equality Act 2010) when taking decisions. This in broad terms involves understanding the potential impact of policy and decisions on different people, taking this into account and then evidencing how decisions were reached.

- 3.2 It is important to note that consideration of the Public Sector Equality Duty is not a one-off task. The duty must be fulfilled before taking a decision, at the time of taking a decision, and after the decision has been taken.
- 3.3 The protected characteristics are: age, disability, gender reassignment, pregnancy and maternity, marriage and civil partnership (but only in respect of the requirements to have due regard to the need to eliminate discrimination), race (ethnic or national origins, colour, or nationality), religion or belief (including lack of belief), sex, and sexual orientation.
- 3.4 The Public Sector Equality Duty requires decision-takers in the exercise of all their functions, to have due regard to the need to:
- eliminate discrimination, harassment and victimisation and other prohibited conduct.
 - advance equality of opportunity between people who share a relevant protected characteristic and persons who do not share it.
 - foster good relations between people who share a relevant protected characteristic and persons who do not share it.
- 3.5 Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:
- remove or minimise disadvantages suffered by persons who share a relevant protected characteristic where those disadvantages are connected to that characteristic.
 - take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it.
 - encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.
- 3.6 The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include steps to take account of disabled persons' disabilities.
- 3.7 Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard to the need to:
- tackle prejudice
 - promote understanding.
- 3.8 An Equality Impact Assessment for this proposal was completed on 21 March 2023 and it was found to have a neutral impact on those with protected characteristics.

4. Other considerations

Workforce comments

- 4.1 Workforce engagement indicates that additional training and tools in the Firefighter's toolbox to deal with technically challenging fire dynamics will be welcomed. Trade Unions have been consulted and are supportive of the proposals. When the final equipment is selected this will be formally consulted with the representative bodies through the Brigade Joint Committee for Health and Safety at Work.

Procurement comments

- 4.2 The procurement process will be carried out by Babcock Critical Services and will be carried out under a competitive tender process.
- 4.3 This will follow the usual process, where Babcock will produce a Tender Specification which details all the LFB requirements and gives them a score, which relates to the importance that the feature.
- 4.4 There are four companies that supply branches that meet the criteria detailed, so all of these will be invited to tender.
- 4.5 Once the tenders are received, they will be scored using the scores detailed in the tender specification. Additional scores will be included which cover the company's financial standing and ability to support the product over its expected life. In this case it would be a 7-year operational life.
- 4.6 The scoring is divided between technical compliance and financials, with a ratio of 60% of the score attributed to the procurement and financial aspects, with 40% on the products engineering aspects. The scoring process involves OP&A, FLEET and Babcock.
- 4.7 The product that scores the highest will usually be the one that is accepted; however, operational tests are also carried out which may highlight issues or concerns which might override the highest scoring product.
- 4.8 Babcock will negotiate the contract to supply the product with the selected supplier and will manage the ongoing support and repair of the product for the full operational life. The cost of this is covered within the slot price, which must be agreed as part of the procurement process.
- 4.9 The timescales for the procurement will be agreed once funding for the project has been approved.

Conflicts of interest

- 4.10 There are no conflicts of interest to declare from those involved in the drafting or clearance of this decision.

5. Financial comments

- 5.1 There will be an ongoing revenue requirement for maintenance costs of £10,980 per annum which will be paid from the base budget within LFB's Property and Technical and Service Support departments. The impact on the Capital plan for 2024/25 is also included as part of a revised capital plan as this report sets out £242,714 of capital expenditure. The costs of this project shall be met from the drawdown of the Fire Safety Improvement reserve, of which there is currently a balance of over £29,000,000 and will be a one-off draw on this reserve.

6. Legal comments

- 6.1 Under section 9 of the Policing and Crime Act 2017, the LFC is established as a corporation sole with the Mayor appointing the occupant of that office. Under section 327D of the GLA Act 1999, as amended by the Policing and Crime Act 2017, the Mayor may issue to the LFC specific or general directions as to the manner in which the holder of that office is to exercise his or her functions.
- 6.2 By direction dated 1 April 2018, the Mayor set out those matters, for which the LFC would require the prior approval of either the Mayor or the Deputy Mayor for Fire and Resilience (the "Deputy Mayor").

- 6.3 Paragraph (b) of Part 2 of that direction requires the LFC to seek the prior approval of the Deputy Mayor before “[a] commitment to expenditure (capital or revenue) of £150,000 or above as identified in accordance with normal accounting practices...”.
- 6.4 The Deputy Mayor's approval is accordingly required for the LFC to procure the misting lance technology set out in this report.
- 6.5 The proposed procurement route is aligned with the LFC's Scheme of Governance relating to Procurement and the contractual arrangements with Babcock.
- 6.6 These comments have been adopted from those provided by the LFC's General Counsel Department in report LFC-23-097x to the LFC.

Appendices and supporting papers:

Appendix 1 – Report LFC-23-097y – Procurement of Misting Lance Technology

Public access to information

Information in this form (Part 1) is subject to the Freedom of Information Act 2000 (FOI Act) and will be made available on the GLA website within one working day of approval.

If immediate publication risks compromising the implementation of the decision (for example, to complete a procurement process), it can be deferred until a specific date. Deferral periods should be kept to the shortest length strictly necessary. **Note:** This form (Part 1) will either be published within one working day after approval or on the defer date.

Part 1 Deferral:

Is the publication of Part 1 of this approval to be deferred? NO

Part 2 Confidentiality: Only the facts or advice considered to be exempt from disclosure under the FOI Act should be in the separate Part 2 form, together with the legal rationale for non-publication.

Is there a part 2 form – YES

ORIGINATING OFFICER DECLARATION:

Drafting officer to confirm the following (✓)

Drafting officer

Richard Berry has drafted this report with input from the LFC and in accordance with GLA procedures and confirms the following:

✓

Assistant Director/Head of Service

Niran Mothada has reviewed the documentation and is satisfied for it to be referred to the Deputy Mayor for Fire and Resilience for approval.

✓

Advice

The Finance and Legal teams have commented on this proposal.

✓

Corporate Investment Board

A summary of this decision was reviewed by the Corporate Investment Board on 22 .

✓

INTERIM CHIEF FINANCE OFFICER:

I confirm that financial and legal implications have been appropriately considered in the preparation of this report.

Signature:



Date:

22/01/2024