

## **Appendix 1**

### **Summary & Actions - Epping Forest Wildfire Improvement Plan 2013**

#### **Theme A – 1. Staff Information, Training and Awareness**

##### **1. Fire Severity Rating/Index Awareness**

The Met Office maintains a Fire Severity Index (FSI), <https://www.metoffice.gov.uk/public/weather/fire-severity-index/#> which is an assessment of how severe a fire could become if one were to start. It is not an assessment of the risk of wildfires occurring. The FSI shows the current day's fire severity and a forecast of likely fire severity over the coming five days. The index values are from 1 to 5, which represents an increasing degree of fire severity as follows:

- FSI level 1 = low fire severity
- FSI level 2 = moderate fire severity
- FSI level 3 = high fire severity
- FSI level 4 = very high fire severity
- FSI level 5 = exceptional fire severity

In 2013, in line with the then **Fire Habitat Plan** operational awareness of both weather warnings and the FSI was limited to a small number of Senior Managers and general messages regarding FSI were not distributed more widely to staff or the public.

<b>ACTION A.1</b>	<b>Staff Awareness - Complete</b> All Epping Forest staff are now updated on a weekly basis regarding the FSI Index for the week ahead.
	<b>Public Awareness - Complete</b> The Epping Forest social media Twitter team also Tweet regular public safety messages about fire awareness to 6,843 followers (as of 12.2018).

##### **2. Access to Incident Command Centres**

Multi-Agency Gold Incident Command (MAGIC) is a mechanism created for strategic level participants from multiple agencies to fully co-operate under a single command during major incidents. MAGIC meets the Civil Contingencies Act 2004 (Contingency Planning) Regulations (2005) for the managing Category 1 and 2 Responder staff with a role in major incidents.

In 2013, there was a single MAGIC incident on 19<sup>th</sup> July 2013 where three separate fires had been deliberately set at Leyton Flats. Despite having trained beforehand with the London Fire Brigade Waltham Forest team in the Spring of 2013, the Waltham Forest Commander and Sub-Commander were not available on the day of the fire and command was assumed by the Newham Sub-commander who was unfamiliar with the nature of Epping Forest. City Corporation staff were not initially permitted access to the Command Centre which prevented the early exchange of critical information.

<b>ACTION A.2</b>	<p><b>Access to Incident Command Centres - Complete</b></p> <p>11 key Epping Forest staff were trained as Local Authority Liaison Officers (LALOs) which provides access to Incident Command Centres.</p> <p>LALO training commenced in June 2014, followed by November 2016 at the London Fire brigade HQ and was refreshed in Autumn 2018.</p>
	<p><b>Incident Scenario Training - Complete</b></p> <p>Epping Forest LALO staff participated with Local Authority LALOs in 2-day mock scenario exercise with Blue Light Services supplemented with Army and RAF Trainers.</p>

## **Theme B - Incident Management**

### **3. Mapping & Numbering/Naming Fire Gates**

In drawing together 16 fire tenders to fight a major incident fire, MAGIC Fire Brigade Commanders rely on calling engines from a range of fire stations in London. At the height of the fire tenders from as far afield as Brixton and Richmond were in attendance. Consequently, some fire crews had an extremely limited knowledge of the immediate area which hampered the ability to deploy effectively. Crews found that there was a lack of mapping and local orienteering locations such as named gates and entrances that could help Commanders effectively coordinate activity.

<b>ACTION B.3</b>	<p><b>Mapping &amp; Numbering of all Epping Forest Fire Gates - Complete</b></p> <p>The Epping Forest Safety and Assets team have now mapped all the Epping Forest fire gates, numbering each gate consecutively. This mapping is maintained within the Epping Forest GIS system and remains accessible to Epping Forest Gold Commanders.</p>
	<p><b>Hard Copy Mapping Availability – Complete</b></p> <p>Digital-print mapping of fire gate locations is also available in ‘grab-bags’ for all Epping Forest first responders to carry to an incident site.</p>
	<p><b>Physical Signing of Gates – To be completed</b></p> <p>Work to physically signal Epping Forest fire gates is yet to be undertaken on cost grounds. Work is being combined with corporate branding imagery and the opportunity to add key messages regarding the byelaws.</p>

**4. Map and physically mark Emergency Vehicle Rendezvous Points (EVRPs)**  
EVRPs enable Callout Duty Managers and Forest Keepers to rendezvous with Emergency Service vehicles at key Forest car parks to enable Epping Forest vehicles to lead the emergency services vehicles to isolated incidents. While fires can normally be easily visibly located by emergency vehicles, vehicle access points can be less obvious. Similarly, for incidents such as medical emergencies expert local knowledge can allow EVRPs to help shorten response times.

<b>ACTION B.4</b>	<b>Designation of EVRP and Air Ambulance Landing sites - Complete</b> Both EVRP and Air Ambulance Landing sites have been designated across Epping Forest and have been shared with the emergency services. Digital print mapping is again available in Emergency Responder grab-bags.
	<b>Hard Copy Mapping Availability – Complete</b> Digital-print mapping of EVRP and Air ambulance Landing Sites locations is also available in ‘grab-bags’ for all Epping Forest first responders to carry to an incident site.
	<b>Heli-handler Ground Crew Training – Partially Complete</b> One LALO Officer has been Heli-Handler trained. (Overlap with London Hyperbaric Facility Risk Assessment).
	<b>Physical Signing of EVRPs – To be completed</b> The forthcoming Epping Forest car park review will include proposals to physically mark prominent EVRPs within car parks.

**5. Map positions of all fire hydrants and keep hydrant accesses clear**  
The Fire Brigade inspects Fire Hydrants locations every 4 years, remarking fire hydrants and making maintenance recommendations. Fire Brigades manage information regarding fire hydrant locations through a GIS-based system which is not publicly accessible due to security concerns.

Given the complex character of the Forest, the WIP recommended that Epping Forest manages its own fire hydrant map and integrates the maintenance of surrounding vegetation into annual work plans to ensure that hydrants remain accessible and easy to locate.

<b>ACTION B.5</b>	<b>Mapping of all Fire Hydrant Sites sites - Complete</b> All Epping Forest hydrants are now mapped on a GIS layer within the Forest GIS system which is accessible to Gold Commanders.
	<b>Hard Copy Mapping Availability – Complete</b> Digital print maps of hydrant locations have again been included within emergency response ‘grab-bags’ for first responders.
	<b>Hydrant Locations part of regular vegetation management programme - Complete</b>

	Hydrant locations are kept clear as part of the Conservation Mowing Programme
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## 6. Enhance Fire Brigade off-road and non-hydrant capability

The main London Fire Brigade Mercedes-Benz Atego appliances have a 1,365-litre water storage capacity. With on-board pumps capable of pumping 3,910 litres/min the proximity of fire hydrants or alternative water sources is therefore critical to a continuing and effective fire-fighting response. In some off-road circumstances away from fire hydrants the firefighting response was clearly limited. At the Leyton Flats major incident, the large fire appliances were forced to refill from the already low Hollow Ponds despite its Site of Special Scientific Interest (SSSI) status.

<b>ACTION B.6</b>	<b>Purchase Intermediate Bulk Containers - Complete</b> 4 x 1,000 litre caged Intermediate Bulk Containers (IBCs) which could be stored at key fire locations. However, based on immediate experience the translucent IBCs were prone to water contamination and vandalism and were alternatively mounted on Toyota Hi-Lux and Ford Ranger pick-ups to help directly resupply fire appliances fighting fires away from hydrants locations.
	<b>IBC pumping facility – Complete</b> The Fire Brigade has loaned high pressure pumps to allow the rapid deployment of the contents of the IBCs.

## 7. Joint training exercises with Essex and London Fire Brigades each Spring.

The WIP recommending building on existing joint training exercises.

<b>ACTION B.7</b>	<b>Joint Training Exercises Undertaken - Complete</b> Training exercises undertaken subject to Brigade resources.
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## 8. Access to keys for fire gates

All local emergency services are supplied with Epping Forest specialist Kaba keys for fire gate locks. In situations where fire appliances are being drawn from further afield, Epping Forest incident responders need to be able to issue additional keys and/or guarantee that fire gates can be locked open.

<b>ACTION B.8</b>	<b>Reissue of EF Fire gate keys to all local Fire Crews - Complete</b> Epping Forest keys were recirculated to fire stations following the move to high-security fire gates at Epping Forest. First responders also have a supply of keys to issue at incidents.
	<b>EF LALO Staff to hold additional fire gate keys - Complete</b> First responders also have grab bag supplies of keys to issue at incidents.

## **Theme C - Habitat Management**

### **9. Maintaining wider fire breaks**

The experience at both Wanstead and Leyton Flats was that wildfires had easily traversed or 'leapt' the 3.5 metre fire breaks and that wider fire breaks should be cut in future.

<b>ACTION C.9</b>	<b>Firebreak Mapping - Complete</b> Across the winter of 2013 an extensive mapping operation was undertaken to identify a grid of firebreaks which could be cut to a wider 8 or 10 metre specification.
	<b>Natural England Consent for firebreak cutting - Complete</b> Consent provided.
	<b>Cutting of Firebreaks - Complete</b> The cutting of these firebreaks commenced in 2014, however, the narrow Epping Forest Flail Mower Collectors used to manage conservation mowing proved to be laborious in cutting consistently wide firebreaks.

### **10. Reducing the risk of crown fires by the removal of fire 'ladders'**

One of the most spectacular and damaging elements of the fires, as well as the most damaging, was the outbreak of crown fires in the canopy of large older trees. Flames had lifted into the canopy along chains of gorse and young trees that typically formed copses in association with older trees. While representing valuable conservation habitat the Fire Brigade advised that these 'fire ladders' should be eliminated by removing young trees and older shrubs associated with the veteran trees.

<b>ACTION C.10</b>	<b>Fire Ladder removal - Complete</b> Extensive work has been undertaken at Leyton and Wanstead Flats to remove stands of gorse and bracken understory and young trees close to older larger trees to combat the 'fire ladder' effect. Unfortunately, subsequent works to remove vegetation during the winter of 2017 received significant criticism from local conservation groups regarding the loss of valuable habitat for migrating birds.
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### **11. Extinguishing Sub-soil Fires**

Fire crews were surprised by the ability of the of the thin grassland soils on river gravel terraces to continue to burn for long periods together with their ability to resist extinguishment. Some experienced firefighters likened the grassland fires to persistent peatland fires.

<b>ACTION C.11</b>	<b>Sub-soil Fires - Complete</b> Incident 'grab-bags' now include drift geology maps to help inform Incident Commanders regarding underlying soil conditions.
	<b>Understanding Sub-soil Fires – Incomplete</b> Despite extensive research there is currently no adequate explanation for the sustained burns associated with gravel terraces.

## **Theme D - Improved Communications**

### **12. Introduce safety signing during periods of high to very-high fire severity**

The FMR encouraged the City Corporation to consider the erection of further safety messaging during periods of heightened fire risk to help visitors understand key risks such as discarding lit cigarettes and using disposable barbeques.

<b>ACTION D.12</b>	<b>Temporary Signing Trials - Complete</b> The Epping Forest Keeper Service had been experimenting with temporary A-Board signage to discourage the use of disposable barbeques and the WIP recommended that this work should continue. Sadly, the boards had no discernible impact on public behaviour with no substantial change in the number of advisory conversations undertaken before or after the use of the A-boards. The regular theft of the temporary A-Boards has also restricted this practice.
	<b>Understanding Sub-soil Fires – Incomplete</b> Despite extensive research there is currently no adequate explanation for the sustained burns associated with gravel terraces.

The failure of signing to work in certain circumstances is thought to be related to Wilde's **Risk Homeostasis Theory** where individuals behave according to their own assessments of risk, and therefore if they perceive a risk to be low, they will take the additional risk and enjoy what they consider to be the benefit.

### **13. Use of indirect messaging to accentuate fire risk**

Based on their experience of community outreach campaigns on hoax calls and fire detectors Fire Brigade Officers encouraged Epping Forest staff to use indirect and subtle messaging to influence public behaviour. Reference was made to practice on National Park grouse moors of storing fire beaters at car parks during High Risk Fire Severity Index to underline concerns.

<b>ACTION D.13</b>	<b>Storing fire beaters at access sites – Not completed</b> This proposal was not considered realistic in an urban environment.
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### **Use of social media to promulgate fires safety messages**

14. The WIP recommended the expansion of the use of Social media, particularly Twitter, which by 2012 had 100 million users posting 319 million tweets a day. Social media could be used to reach regular Epping Forest users with key messages around fire risks.

<b>ACTION D.14</b>	<b>Storing fire beaters at access sites – Complete</b> The Epping Forest social media Twitter team also Tweets regular public safety messages about fire awareness to 6,843 followers (as of 12.2018). [See also A.1]
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