

Technical Appendix 8: Fire and Rescue Service

1.0 Service Overview

- 1.1 The county council, in its capacity as the Fire and Rescue Authority (FRA), has statutory duties under The Fire and Rescue Services 2004 and must make provisions for:
- extinguishing fires in their area
 - protecting life and property in the event of fires in their area
 - rescuing and protecting people in the event of a road traffic collision, and
 - rescuing and protecting people in the event of other emergencies.

- 1.2 FRAs also need to collect information to assess risk in their areas as well as protect the health and safety of their workers. The Fire and Rescue Services Act 2004 also gives the Government responsibility for producing the Fire and Rescue National Framework which outlines the Government's high level priorities and objectives for FRAs in England. The National Framework's priorities for FRAs are to:

- identify and assess the full range of foreseeable fire and rescue related risks their areas face, make provision for prevention and protection activities and respond to incidents appropriately
- work in partnership with their communities and a wide range of partners locally and nationally to deliver their service
- be accountable to communities for the service they provide

The Civil Contingencies Act 2004 sets out FRAs responsibility to react to emergencies as a category 1 responder.

- 1.3 The Service operates from 29 fire stations, a headquarters building, training and development centre, and a number of additional sites providing support services.
- 1.4 Underpinned by statutory obligations within the Fire and Rescue Services Act 2004, the Fire and Rescue National Framework for England provides the overall strategic direction for Fire and Rescue authorities. Within the framework, each authority is required to produce an Integrated [Risk Management Plan \(IRMP\)](#) that identifies and assesses all foreseeable fire and rescue related risks that could affect its community. Each IRMP must demonstrate how prevention, protection and response activities will best be used to mitigate the impact of risk on its communities. Through local determination of risk and local determination of response standards, it is expected that this will:
- Reduce the number of emergency incidents occurring;
 - Reduce death and injury from fire and other emergency incidents;
 - Ensures emergency response standards of 10 minutes are met;
 - Reduce the socio-economic impacts of fire;
 - Protect heritage;
 - Safeguard the environment;

- Contribute to the development of stronger, more self-sufficient and cohesive communities;
 - Provide value for money.
- 1.5 Section 17 of the Crime and Disorder Act 1998 requires local authorities and other agencies to consider crime and disorder reductions and community safety in the exercise of all their duties and activities.
- 1.6 The above legislation imposes a requirement on Fire and Rescue Authorities to ensure efficient and effective fire and rescue provision, and to ensure that the Service contributes effectively to the wider community safety agenda. Increases in population place additional demand on fire and rescue resources, both in terms of the need for additional capital investment in new facilities and funding for additional equipment, and on revenue budgets for firefighters, officers and support staff.
- 1.7 It is, therefore, reasonable for fire and rescue service needs to be considered by local planning authorities when determining planning applications relating to the provision of new development which brings forward an increased risk of incidents; changes the risk profile for the area and increases attendance times to incidents.
- 1.8 The capability and availability of water resources to fight fires is also a key consideration for the Service. The provision of public fire hydrants is not covered by Building Regulations 2010 (Part B5 as supported by Secretary of State Guidance 'Approved Document B') and developers are expected to make provision for fire hydrants to adequately protect a development site for fire-fighting purposes.

2 Assessing need and calculating demand

- 2.1 The demands on fire and rescue resources manifest themselves in a variety of forms, dependent on the scale and nature of the proposed development, including the need to:
- acquire land and the capital costs of fire and rescue service buildings and associated facilities for the provision of new fire stations;
 - extend existing fire stations;
 - replace any temporary structures with permanent accommodation;
 - provide additional vehicles and other resources for response;
 - extend communication infrastructures;
 - reduce risk and demand through advice and the provision of equipment e.g. improve fire suppression (sprinklers) systems in existing and/or new premises;
 - enforcement: the fire and rescue service is a regulator of fire safety compliance in many businesses and this includes a requirement to inspect plans and high risk premises; in some instances this leads to the requirement for formal action / prosecution of businesses who neglect their duties to provide fire safe buildings;
 - hydrants: we employ staff to inspect water hydrants and ensure they are in good working order in advance of them being required to fight

fires; additions to premises numbers increases ongoing revenue costs in this area;

- review staffing levels.

- 2.2 The provision of effective fire and rescue services is dependent upon maintaining both a local and strategic approach. The value of the contribution required to mitigate the impact of development on fire and rescue resources will, therefore, need to take account of both these factors.
- 2.3 The matrix provided below outlines the fire and rescue service capital calculation of a Section 106 requirement for development of new dwellings across Hertfordshire. The fire and rescue service calculate its capital requirement to be £365.32 per new residential unit and £115.35 per m² for commercial floorspace.
- 2.4 Individual multipliers are not required as the service assess demand on a per dwelling basis, irrespective of household occupations.
- 2.5 Ten-minute response time isochrone maps are used to model service provision. This ensures that there is adequate capacity at fire stations and that the ten-minute response time standard is met.
- 2.6 In practice, the number and location of hydrants is determined at the time the water services for the development are planned in detail, which is usually after planning consent is granted. In instances where adequate hydrants are available at the time the water mains are planned, then no extra hydrants will be needed.
- 2.7 Fire hydrants should be designed into the development at the masterplanning stage and implemented through a planning condition. Condition wording is provided below:

No above ground works shall take place until a scheme for the provision of adequate water supplies and fire hydrants, necessary for firefighting purposes at the site, has been submitted to and approved in writing by the Local Planning Authority. The development shall not be occupied until the scheme has been implemented in accordance with the approved details.

Reason for condition: to ensure adequate water infrastructure provision is made on site for the local fire service to discharge its statutory firefighting duties.

- 2.8 The developer, promoter, and/or local planning authority should coordinate with the Water Officer to confirm the requirement for a condition, and any subsequent need to discharge, remove or change the condition. The Water Officer is contactable at water@hertfordshire.gov.uk.

Calculation of costs: Residential

| Item | Description | Data |
|------|---|------------|
| | Activity factor | |
| 1 | Residential fires as a percentage of all property fires (3-year average) ¹ | 74.48% |
| | Cost of new additional fire stations, appliances and equipment | |
| 2 | Number of Households in Hertfordshire ² | 485,041 |
| 3 | Divide by the number of fire stations | 29 |
| 4 | Average number of dwellings per fire station (2 ÷ 3) | 16,725 |
| 5 | Estimated build cost per fire station (Q1 2020) | £5,750,000 |
| 6 | Average cost of new fire appliance plus equipment ³ | £360,000 |
| 7 | Average cost per new dwelling towards buildings, appliances and equipment ((5 + 6) ÷ 4) by new build increase | £365.32 |
| 8 | Indexed to Q1 2022 | £380.59 |
| | Annual lease costs of additional firefighters personal protective equipment (PPE) | |
| 9 | Averaged establishment per fire station (FTE) | 28 |
| 10 | Total PPE cost per new fire station (Leased) | £15,732 |

Calculation of costs: Commercial

| Item | Description | Data |
|------|---|---------------------|
| | Activity factor | |
| 1 | Non-residential fires as a percentage of all property fires (3-year average) ⁴ | 21.76% |
| | Cost of new additional fire stations, appliances and equipment | |
| 2 | Number of non-residential businesses in Hertfordshire ⁵ | 34,303 |
| 3 | Divide by the number of fire stations | 29 |
| 4 | Average number of non-residential buildings per fire station (2 ÷ 3) | 1,182 |
| 5 | Estimated build cost per fire station | £5,750,000 |
| 6 | Average cost of new fire appliance plus equipment ³ | £360,000 |
| 7 | Average cost per new non-residential unit towards buildings, appliances and equipment ((5 + 6) ÷ 4) by new build increase | £5,169 |
| 8 | Average floorspace sampled ⁵ | 44.81m ² |
| 9 | Cost per non-residential building per m2 (7÷8) | £115.35 |
| 10 | Indexed to Q1 2022 | £120.17 |
| | Annual lease costs of additional firefighters personal protective equipment (PPE) | |
| 11 | Averaged establishment per fire station (FTE) | 28 |
| 12 | Total PPE cost per new fire station (Leased) | £15,732 |

¹ Data from HFRS Vision incident recording system

² Data from CIPFA Fire and Rescue Service Statistics – 2019 Summary

³ Data from HFRS procurement department

⁴ Data from HFRS Vision incident recording system

⁵ LEP - <https://www.hertfordshirelep.com/media/7128/loss-of-employment-space-in-hertfordshire-february-2019.pdf>

Building new fire stations

- 2.9 When building a new fire station, it is essential that all factors are considered within the design to ensure that both operational and local community needs are met.
- 2.10 There are various staffing models in operation across Hertfordshire Fire and Rescue Service (HFRS) which directly influence the size of, and range of facilities required. Table 1, below, gives examples of both the total Gross Internal Area (GIA) and land area requirement for new fire stations based on the duty system type. These are based on current Whole-time and Day Crewed/On-call crewing station models within HFRS. These illustrative examples would form the basis of discussions for future new builds.

Examples of station areas within HFRS by duty system type

| Duty system type | Station Area (Sq.m) | Site Area (Sq.m) |
|--------------------|---------------------|------------------|
| Whole-time Station | 1,300 | 4,400 |
| Day crewed Station | 620 | 2,340 |
| On-call Station | 240 | 2,000 |

- 2.11 In addition, any new station will require certain facilities as standard specifications. A summary of the main requirements is listed below but, again, these would be discussed on a case by case basis dependent on the requirements of the Service:
- Minimum of 3 appliance bays for Whole-time Stations;
 - Minimum of 2 appliance bays for Variable/On-call Stations;
 - bay ancillary garage (at Whole-time stations only);
 - Training ground / drill yard (to be suitable for Breathing Apparatus and line working training);
 - Training Tower;
 - Breathing Apparatus maintenance room (including air compressor);
 - Kitchen facilities;
 - Rest area;
 - Watch room;
 - Lecture Room;
 - Office space;
 - Specific room/facility for community use;
 - Safe access and egress for appliances;
 - An area suitable for removal of demountable pods from prime movers;
 - Facilities for East of England Ambulance Service*
 - Diesel pump (above ground as per Engineering Manager request).

Fire Suppression (Sprinkler) systems

- 2.12 The emphasis for the Fire and Rescue Service is changing from that of reacting to fires and other emergencies, to preventing and reducing their impact on individuals, communities and organisations. In developing prevention strategies, Fire Authorities are including the use of fire suppression

systems, particularly sprinklers, to protect the most at risk and vulnerable in society.

- 2.13 The expansion of Hertfordshire through development provides an opportunity to take a lead by applying a proactive approach towards protecting the community and infrastructure through in-built fire suppression systems.
- 2.14 A sprinkler installation can significantly help to mitigate the loss of life and damage to property caused by fire and the ongoing financial and social disruption to the householder or community. Click for more information about [Efficiency and Effectiveness of Sprinkler Systems in the United Kingdom](#).