

Using FSEC to develop an Integrated Risk Management Plan

General

The risk assessment stage of the FSEC process highlights areas of high risk, and serves to inform both operational response planning and fire safety planning.

Operational response planning

The outputs from the FSEC Toolkit can be used to compare resource allocation strategies. Thus, separate runs of the software can be used to identify the predicted effect of changing any resource allocation, without any need to make the change and put the population at risk. For example, the effect of adding or subtracting appliances, changing the location of specials or trying different shift patterns could be evaluated.

Fire safety planning

The information held in the FSEC GIS can be used to help formulate community fire safety (CFS) plans, and to identify buildings where life and property risks need addressing.

In the case of dwellings risks, it is possible to look for areas of high risk that have specific demographic characteristics, for example, a high level of elderly or single-parent families. This can help to target CFS campaigns.

In the case of other buildings, it is possible to identify the major contributors to high risks in an area, to determine whether specific buildings are having a significant impact, or whether certain types of building are posing significant risks. These risks may then be reduced by fire safety enforcement activity, or operational response, or a combination of the two.

In the case of special services, the brigade can highlight hotspots and contribute its experience to local safety initiatives, and help to reduce risks from non-fire incidents.

What happens next?

The ODPM has prepared detailed documentation covering the concepts behind the FSEC process and the operation of the computer software. Courses have been organised to guide team leaders and responsible principal officers on the activities that they will need to undertake to successfully implement FSEC, and to train team members in the detailed operation of the software. You should now have received IRMP Guidance Note 3, giving details of the ODPM timescales.

In addition, the ODPM has set up a team of fire officers and scientists to train and support brigades through Phase 2 of Integrated Risk Management Planning.



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Fire Service Emergency Cover: Overview

For general advice on aspects of FSEC please contact:
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Introduction

Scope of this document

This document introduces the concept of Fire Service Emergency Cover (FSEC) as Phase 2 of the Integrated Risk Management Planning (IRMP) process. It will be covered here at a strategic level with further documents published separately to explain the detail.

Background

In 2003 the Office of the Deputy Prime Minister (ODPM) asked each Fire Authority to produce an Integrated Risk Management Plan (IRMP). The plan should integrate all aspects of service delivery, including fire cover and fire safety and would aim to lead to improved community safety and more productive use of fire service resources. Two guidance notes were issued, which outlined the philosophy behind IRMPs, gave advice on consultation and set a timeframe for the work.

Guidance Note 1 Introduced IRMPs saying:

“An effective IRMP should:

- identify existing and potential risks to the community within the authority area
- evaluate the effectiveness of current preventative and response arrangements
- identify opportunities for improvement and determine policies and standards for prevention and intervention
- determine resource requirements to meet these policies and standards”.

Two phases of Integrated Risk Management Planning are currently envisaged. In Phase 1, brigades were encouraged to identify those areas where the case for immediate action could be readily substantiated. In Phase 2, it was recognised that a more structured, numerical approach would be required to achieve maximum benefit. This phase will make use of the considerable national research undertaken into FSEC, which was subjected to intensive development and validation during the Pathfinder Trials.

The ODPM will provide each brigade with a suite of software that encompasses the FSEC process and allows them to undertake a risk-based assessment of their brigade area, using a common approach that has been thoroughly tested and independently validated.

The FSEC Process

General

The FSEC process consists of three main components:

- Risk assessment.
- Response planning.
- Modelling the consequences of resource deployments.

A geographical information system (WINGS™) uses bespoke software to calculate the probable losses resulting from a particular vehicle allocation strategy, in terms of lives lost and property costs.

What we will supply

The basic system, which will be supplied ready loaded on to a high specification, standalone PC, contains the following:

- WINGS™ GIS and FSEC software.
- Digital maps at various scales.
- 2001 Census output areas and data.
- Road data.
- Valuation Office data to assist with risk assessment of what is termed ‘other buildings’, e.g., offices, shops, hospitals.
- Three years’ worth of incident data for the brigade area. This data will be processed and geo-coded where necessary by the ODPM and loaded into WINGS™.

Local information, such as county boundaries and fire stations, will also be loaded on to the software. All data provided should be checked locally.

The Census output areas serve as the basic building blocks for relating risk and response to the consequences of fire service intervention, in terms of life and property loss.

Risk assessment

The risk calculations are carried out in different ways for different risks. Four main types of risk have been considered in FSEC:

- **Dwellings Risk:** Considers the individual risk to life from fires in the home. Risk assessments are based on FDR1 dwelling incidents, which have been cross-referenced with local population data.
- **Other Buildings Risk:** Considers the risk to life and property from fire in other buildings. Risk assessments are based on a count

of buildings, their individual risk and their occupancy types within set areas of similar characteristics. The national probability of a fire in each occupancy type is known, allowing an estimate of the overall risk to be made. An initial assessment of buildings will be based on Valuation Office data, which will provide a good start to the risk assessment. To provide a fuller picture, brigades may supplement this data by combining it with other data such as fire safety inspections, 1(i)(d) visits, etc.

- **Special Services Risk:** Considers the risk to life in special services. Risk assessments are considered in terms of incidents per square kilometre, with all incidents plotted to enable hotspots to be identified.
- **Major Incidents Risk:** Risk assessments are based on national probability levels, modified by brigade experience of the risk concerned.

Response specification

Brigades will be able to specify the resources that they feel will be needed to respond to likely incidents in an area. The combination of these resources is referred to as the overall ‘planning scenario’.

Resource allocation

Using the risk assessments, response plans and nationally derived relationships for the impact of fire brigade attendance time, the effect of different sitings of resources can be gauged. So, for example, the effect of moving an appliance from one station to another can be calculated in terms of the number of additional lives that might be saved. The brigade may decide upon a series of potential resource allocation strategies that could be evaluated.

It is likely that brigades would start by modelling the current situation, and then make incremental changes to assess the consequence of each increment of change.

Consequence calculation

The software can calculate the time that each vehicle would take to arrive at any Census output area. Once the risks are known for each area, the response to this risk has been specified, and the location of the resources available is known, it is possible to work out the consequences of the specific resource allocation strategy.

These consequences are delivered in terms of predictions of the potential:

- lives lost in dwellings fires, special service incidents and other buildings fires;
- property loss in other buildings fires; and
- total cost of the resources allocated.