CLACKMANNANSHIRE COUNCIL

THIS PAPER RELATES TO ITEM 6

ON THE AGENDA

Report to Resources & Audit Sub-committee

Date of Meeting: 10 December 2014

Subject: Review of Specialist Equipment in Scottish Fire & Rescue Service

---

Report by Head of Strategy & Customer Services

1.0 Purpose

1.1. This report presents to Committee information relating to a Review of Specialist Equipment in the Scottish Fire & Rescue Service that has been provided by the Scottish Fire & Rescue Service for the purposes of scrutiny.

2.0 Recommendations

2.1. It is recommended that the Committee notes, challenges and comments on the report provided by the Scottish Fire & Rescue Services at Appendix 1.

3.0 Considerations

3.1. The information at Appendix 1 was provided to the Head of Strategy & Customer Services by the Local Senior Officer of the Scottish Fire & Rescue Service for the purposes of scrutiny at the Resources & Audit Sub-committee .

4.0 Sustainability Implications

4.1. There are no direct sustainability implications for Clackmannanshire Council.

5.0 Resource Implications

5.1. Financial Details

5.2. The full financial implications of the recommendations are set out in the report. This includes a reference to full life cycle costs where appropriate. Yes ☑

5.3. Finance have been consulted and have agreed the financial implications as set out in the report. Yes ☑

5.4. Staffing - no implications for Clackmannanshire Council.

6.0 Exempt Reports

6.1. Is this report exempt? Yes ☐ (please detail the reasons for exemption below) No ☑

7.0 Declarations

The recommendations contained within this report support or implement our Corporate Priorities and Council Policies.

(1) **Our Priorities** (Please double click on the check box ☑)

Not applicable

The area has a positive image and attracts people and businesses	☐
Our communities are more cohesive and inclusive	☐
People are better skilled, trained and ready for learning and employment	☐
Our communities are safer	☐
Vulnerable people and families are supported	☐
Substance misuse and its effects are reduced	☐
Health is improving and health inequalities are reducing	☐
The environment is protected and enhanced for all	☐
The Council is effective, efficient and recognised for excellence	☐

(2) **Council Policies** (Please detail)

Not applicable

8.0 Equalities Impact

8.1 Have you undertaken the required equalities impact assessment to ensure that no groups are adversely affected by the recommendations?
Yes ☐ No ☑ Not applicable

9.0 Legality

9.1 It has been confirmed that in adopting the recommendations contained in this report, the Council is acting within its legal powers. Yes ☑

10.0 Appendices

10.1 Please list any appendices attached to this report. If there are no appendices, please state "none"

Appendix 1- Review of Specialist Equipment in the Scottish Fire and Rescue Service (Draft)

11.0 Background Papers

11.1 Have you used other documents to compile your report? (All documents must be kept available by the author for public inspection for four years from the date of meeting at which the report is considered)

Yes ☐ (please list the documents below) No ☑

Author(s)

NAME	DESIGNATION	TEL NO / EXTENSION
Stuart Crickmar	Head of Strategy & Customer Services	2127

Approved by

NAME	DESIGNATION	SIGNATURE
Stuart Crickmar	Head of Strategy & Customer Services	[redacted]
Garry Dallas	Executive Director	[redacted]

APPENDIX 1 (part 1)

Communication on the Review of Specialist Equipment in the Scottish Fire and Rescue Service

The Scottish Fire and Rescue Service is legislated to deal with a wide range of emergency incidents in addition to fire, requiring the maintenance of specialist skills and equipment to successfully resolve such incidents. The Fire and Rescue Framework for Scotland 2013 takes this a stage further by making it a priority for the Scottish Fire and Rescue Service (SFRS) to create more equal access to specialist resources and national capacity.

The SFRS has therefore, carried out an evaluation of the specialist resources across Scotland and has completed a report indicating the outcomes of the review.

The principles of the review are outlined below.

1. The first principle is that specialist resources be sited based on risk, operational activity, population and geography as appropriate, but providing equity of access as far as reasonably possible.
2. The review forms part of a long term plan to ensure standardisation and simplification of vehicles and equipment across Scotland.
3. Wherever possible, specialist resources will be sited in wholetime fire stations to allow the necessary training time to ensure crews are confident and competent.

The outcomes of the review will be implemented over the next two years after the completion of any training and vehicle and equipment procurement requirements. Following completion of the implementation plan the specialist resources within Scotland will have a more even distribution giving a more equal access across the country.

Local Senior Officers (LSOs) should ensure that all Local Authorities are given the details of the outcomes of the Review and copies of the final report. Local Authorities are asked to note the contents of the report and the implementation timescales involved.

The direct impact of this review on resources within Clackmannanshire is the removal of heavy rescue resource at Alloa, replaced by a High Volume Pump. These moves allow a more strategic distribution of Resilience assets across Scotland, also ensuring our ability to deliver training and competency. Heavy rescue resources will continue to be available locally, based at Stirling.

RESPONSE & RESILIENCE

REVIEW OF SPECIALIST EQUIPMENT
FINAL REPORT

SCOTTISH
FIRE AND RESCUE SERVICE
Working together for a safer Scotland

CONTENTS

		Page
1.	Executive Summary	1
2.	Introduction	3
3.	Objectives	4
4.	Special Rescue Activity in Scotland	6
5.	Existing Provision of Special Rescue Resources	8
6.	Water Rescue	12
7.	Offshore Firefighting and Support	14
8.	Line Rescue	16
9.	High Reach	18
10.	Rescue Pump	20
11.	Heavy Rescue /Urban Search and Rescue (USAR)	22
12.	High Volume Pump	26
13.	Mass Decontamination (MD)	28
14.	Detection, Identification and Monitoring (DIM)	30
15.	Hazardous Materials	32
16.	Prime Movers	34
17.	Command and Control	36
18.	4x4 Vehicle	38
19.	Wildfire	38
20.	Incident Logistical Support	39
21.	Delivery Timescale	40
22.	Consultation	40

Appendix 1 - Table of stations with special resources 41

1. Executive Summary

The Scottish Fire and Rescue Service inherited a wide array of specialist equipment from the eight legacy fire and rescue services in Scotland. As the demands on services progressively increased over the years, the deployment of additional equipment was undertaken on a local basis, using existing geographical boundaries without any real attempts at mutual aid or cross-border cooperation. A clear imperative to review this position has resulted in the publication of this report, which recommends a range of changes designed to enhance service delivery from a more strategic viewpoint.

From an initial mandate of improving equity of access to fire and rescue resources and delivering efficiencies, this review makes a number of recommendations which will ensure a more balanced disposition of specialist resources across Scotland, based on risk and activity. These improvements will see some resources increased in number where gaps have been identified; or decreased in number where clear overlap and unnecessary over-provision exists.

It is worthy of note that the existing position overstates the actual capabilities across Scotland. Many examples have been identified where the resources do not meet the desired or necessary standard, either in terms of equipment or skills training. A key objective of this review is to produce a standardised approach to each specialist attribute, ensuring that the declared ability is in fact accurate and reliable; and more importantly, safe and effective.

In the vital areas of water rescue and line rescue, additional teams will be created to provide the necessary balance and geographical spread of these resources. Equally important as the simple increase in numbers, a standard delivery model for each resource will see great improvements in training, standard of equipment, stowage of equipment and deployment of resources.

Some current practices, such as the stowage of rescue boats deflated and carried on a range of vehicles not specifically designed for the purpose, will cease. The loss of vital minutes in a rescue environment to inflate and equip boats is unacceptable and must be stopped as quickly as possible.

In areas where some rationalisation is recommended such as Urban Search and Rescue, Mass Decontamination or Command and Control vehicles, reassurances are given that, not only is this a safe and efficient way forward, but that it will result in an improved service with dedicated resources being delivered competently and by better trained and better prepared crews. These recommendations have been made following close consultation with appropriate stakeholders such as the Scottish Government, local authorities and representative bodies. Our ability to declare assets available for UK-wide support at major incidents will actually be enhanced by these measures, as many of our existing resources do not currently meet the required standard.

Unnecessary overburdening of some stations will be removed, with an improved standard of training delivered in all instances. This welcome approach will reduce risk to communities and firefighters alike, by allowing crews to concentrate on a manageable range of equipment and procedures, ensuring confidence and competence in the use of complex equipment.

Acceptance and implementation of these recommendations is key to delivering an efficient and effective model of specialist rescue resources across Scotland; identifying and addressing the substantial risks which exist, and providing an appropriate level of cover for each of our major cities where the perceived risk is greatest. This forms a fundamental step in the creation of a single fire and rescue service for Scotland, the safety of communities being addressed without historical boundaries restricting service delivery.

2. Introduction

The Scottish Fire and Rescue Service (SFRS) delivers an emergency service within a complex framework of law, regulation and operational guidance. As the role of the fire service has extended over the years beyond firefighting, the range of activities undertaken has continued to expand and widen. Correspondingly, the range of equipment and skills training required has increased greatly.

Prior to the creation of the single national service, all 8 legacy Scottish fire and rescue services had deployed a range of specialist resources based on their individual assessment of risk as described within their Integrated Risk Management Plans. This historical deployment requires to be reviewed to ensure it conforms to the needs of community and firefighter safety across Scotland now that the historical geographical boundaries have been removed.

This review commenced in May 2013, with the aims of delivering on the SFRS' key objectives of delivering operational services efficiently and equitably across the communities of Scotland. Recognising the wide range of specialist resources involved, this review was divided into 16 separate strands, namely:

- Water Rescue
- Offshore Firefighting and Support
- Line Rescue
- High Reach
- Rescue Pump
- Heavy Rescue
- Urban Search and Rescue (USAR)
- High Volume Pump (HVP)
- Mass Decontamination (MD)
- Detection, Identification and Monitoring (DIM)
- Hazardous Materials
- Prime Mover Strategy
- Command and Control
- 4x4 Vehicle
- Wildfire
- Incident Logistical Support

All individual reports were collated at the end of 2013, with a 2 day workshop involving staff from the Response and Resilience Directorate of SFRS and the Fire Brigades Union. This final report presents the outcome of this work, and sets the strategy for implementation of the final delivery of specialist fire and rescue equipment and resources across Scotland. Final timelines for delivery of this project are discussed in a later section, based on a range of limitations including the requirement to procure and deploy equipment, and train staff accordingly.

A number of key principles were acknowledged in the development of the review, notably:

- The underlying expectation was of delivering improved outcomes for Scotland's communities, with greater equity of access to a standardised range of resources
- This review, however, is limited only to the Scottish mainland. Requirements for the range of inhabited islands will be reviewed independently.
- Recognition of the fact that 'Resilience' assets (USAR, HVP, MD, DIM) are not devolved matters to Scottish Government, therefore cognisance taken of our contribution to UK security. Ongoing national reviews of Resilience assets are acknowledged and considered in this report where changes are known
- An imperative to assure competency in our crews by reducing the present overburdening of certain stations. In this regard, wherever possible only wholetime crews will be utilised due to the availability of sufficient training time
- In addition to the restrictions encountered through training requirements, stations will be selected based on their strategic locations and the surrounding risk profile
- Where services can be delivered by partner agencies, this is reflected in the future approach recommended. SFRS is developing a register of such assets which will greatly assist in mitigating risk
- Cost, whilst considered within the individual resource reviews, cannot be fully developed within this report as the full implications of training and crewing arrangements will become apparent as the project to implement these changes progresses. Capital costs for appliance and equipment replacement will be factors in the final delivery timeline of these changes

3. Objectives

This review will assist in achieving the ultimate aims and objectives of the SFRS. Ultimately these aims are to work towards the Scottish Government's Performance Management Framework and principally those National Outcomes to which we are most closely aligned.

The Fire and Rescue Framework 2013 outlines more clearly how we as a service should address these ultimate goals, by setting out 58 priorities under the headings of partnership working, prevention, protection and response. This report aims to address a number of the priorities set against our response service.

In reviewing the disposition and deployment of specialist resources, SFRS recognises a statutory duty to reduce the risks to our communities whilst delivering Best Value; making certain that the communities we serve receive the best possible service, and at the same time providing the greatest possible value for money. The risk management approach to ensuring this, under the heading of Integrated Risk Management Planning, requires us to identify the risks to the community, undertake a process to prioritise these risks, and ensure an appropriate blend and distribution of capabilities to address them.

A specific priority in this regard is set out in Chapter 3 of the Fire and Rescue Framework, which requires more equal access to specialist resources and national capacity. Within this requirement, we have been given a mandate to clarify and communicate the parameters of our operational functions with local community partners, whilst explicitly recognising the need to adapt and improvise in unusual and difficult to define circumstances. A clear expectation is stated that areas with similar risk profiles should normally have similar provision, and that SFRS should develop a leading role in specialist rescue, engaging with the other emergency services and relevant voluntary groups to understand and manage the risk across Scotland.

In attempting to achieve all of these objectives, the twin principles of ensuring both community and firefighter safety will also be at the forefront of our concerns. Improving equality of access has a clear impact on community safety, whilst also affecting firefighter safety. Existing arrangements see specialist resources deployed on historical legacy service grounds. These were predicated on a positive desire to ensure all services were available to all areas, but restricted by geographical boundaries. This had the result of some stations across Scotland requiring to be resourced with several specialist functions simultaneously, potentially compromising the ability of crews to devote the necessary training time to be entirely competent in the necessary procedures and use of the full range of equipment associated with these disciplines. Removal of these boundaries and ensuring a better distribution of these resources will enhance the safety of the firefighters undertaking these specialist rescues, and the communities who require them.

4. Special Rescue Activity in Scotland

Scotland has a land mass of approximately 31,510 square miles, and a population of more than 5.2 million people. Our population is as diverse in its distribution as it is in its culture, with the Central Belt of Scotland being very densely populated, whilst some Highland communities are amongst the most remote in Europe. There are 96 inhabited islands, 34,000 miles of road network, 1520 miles of railway, 3 major international airports and an incalculable number of lochs and other inland waterways.

This varied profile means that the fire and rescue service must prepare for and respond to a significant number of different types of emergency. Recent changes to legislation have given the SFRS additional statutory duties to deal with certain types of emergency other than those that are fire related.

Any incident that is not specifically fire related is known as a 'special service', and these include water rescue, line rescue and confined space rescue, as well as all types of transport incidents, responding to terrorist threats and many more specialist rescue types of incident. In a typical year, the SFRS will attend more than 90,000 incidents in total, with at least 10% of these incidents being recorded as special services. Ensuring equitable access to specialist rescue resources for the communities of Scotland is challenging, and this review of specialist equipment seeks to achieve this goal as far as possible.

Partner Agencies

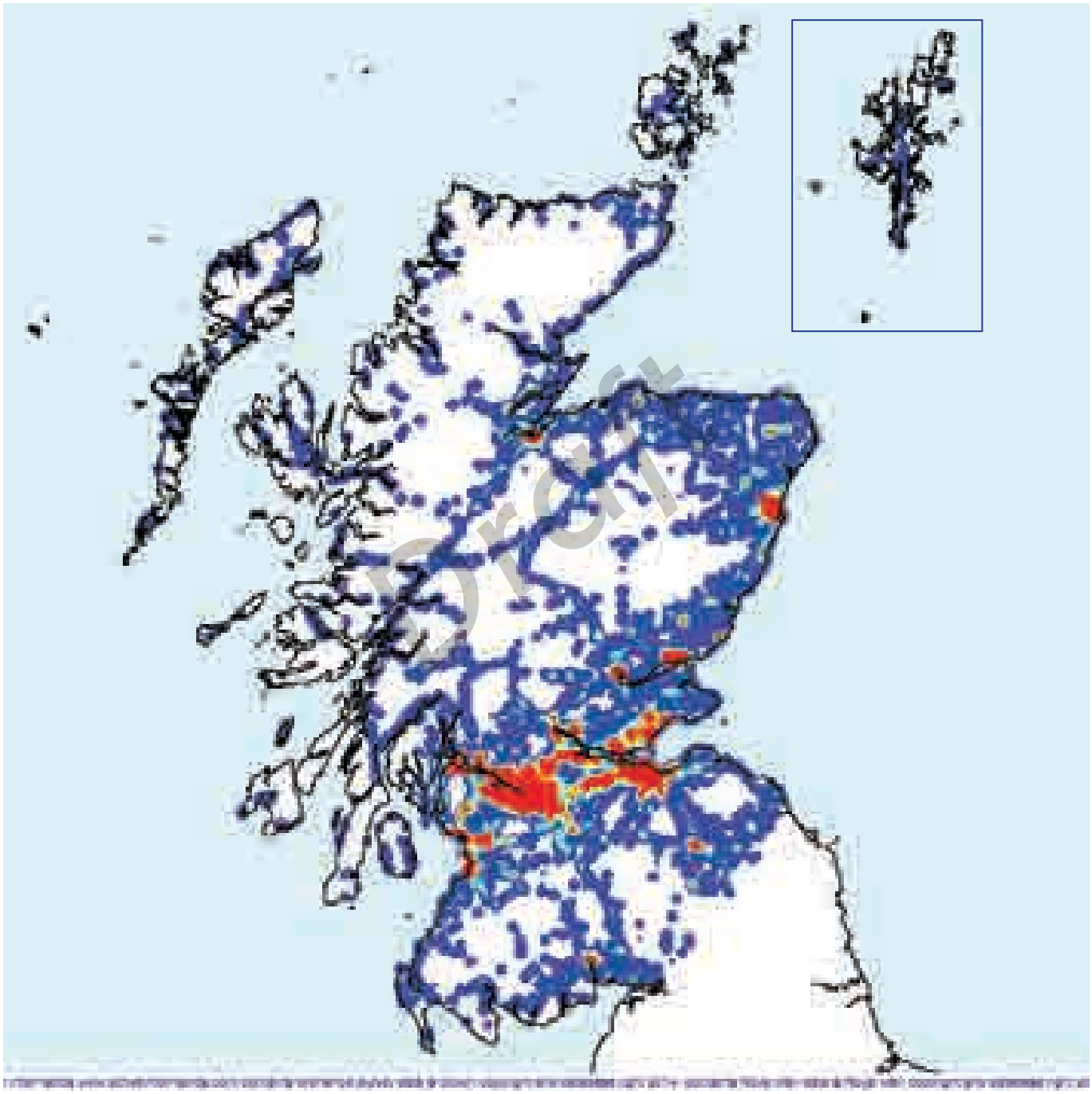
In making recommendations regarding changes to the scale or distribution of resources in Scotland, cognisance is taken of partner agencies and voluntary organisations that also provide some rescue capability.

Legacy arrangements demonstrate a wide range of partnership working between SFRS and major partner agencies such as Police Scotland, the Scottish Ambulance Service, the Maritime and Coastguard Agency and Local Authorities Emergency Planning. A number of formal agreements and arrangements are already in place to share premises such as at Greenock and Kinloch Rannoch, and work is currently ongoing elsewhere across the SFRS to investigate opportunities to progress and extend these arrangements.

Complementing these arrangements, a number of formal agreements made under 'Memoranda of Understanding' or 'Service Level Agreements'; as well as a large number of less formal and local agreements currently exist to engage the services of voluntary or private sector partners where there are recognised attributes and abilities available to provide additional or specific expertise and support. Examples of these include arrangements with Lochaber Mountain Rescue, Trossachs Search and Rescue, the Salvation Army and Rescue Three (water rescue on the River Tay).

In order to secure a consistent and transparent approach to the provision of additional and expert support, the SFRS is creating a comprehensive register of accredited specialist services across Scotland. This register, once fully operational by early 2015, will give a central database of willing and suitable providers of specialist rescue, welfare, communications, transport and supporting services; detailing the organisations' names, locations, capabilities and limitations. The database will be designed to provide a searchable register of assets without creating an administrative burden which outweighs its benefits.

This register will assist us to deliver the best and most efficient rescue capability possible, utilising local knowledge and skills whilst helping to avoid unnecessary duplication. Given the significant challenges posed by the geographical diversity of the Scottish mainland and inhabited islands, this development will assist in meeting the objectives of the SFRS, the Scottish Government and Her Majesty's Inspectorate of Fire and Rescue; by ensuring the most equitable access possible to fire and rescue and specialist resources for all communities across Scotland.



Key	Incidents per 1km square
	0 - 19.9
	20 - 29.9
	40 - 59.9
	60 and over

This diagram details special service incident activity across Scotland over a period of three years (2010/11 – 2012/13) As can be seen from the key, the colour of the shaded areas are coded to represent the number of special service incidents per 1km square over the three year period.

5. Existing Provision of Special Rescue Resources

The provision of special rescue resources in Scotland has evolved in an abstract manner over several decades. Up until the introduction of the Fire (Scotland) Act in 2005, there was not even a statutory duty for fire services to attend road traffic collisions, let alone perform water rescues or deal with chemical incidents or building collapses. Where there is no statutory requirement, there is no funding, and the initial introduction of rescue equipment was achieved from within existing fire service budgets and with minimal guidance available in terms of the standardisation of equipment or capabilities to be achieved.

In addition, prior to the launch of the Scottish Fire and Rescue Service (SFRS) in 2013, individual Chief Officers had a specific responsibility to address risk within their own areas of responsibility, and had understandable reluctance to rely on resources from neighbouring services to provide an emergency response that was not within their direct control.

The result of these legacy arrangements is a collection of special resources across Scotland that differ greatly in terms of the type and standard of equipment provided, the crewing arrangements, training requirements and mobilising arrangements. The strategic location of these resources is also flawed and inconsistent when looked at in a Scotland-wide context, with similar resources often located in relatively close proximity to one another, making other areas of Scotland appear under-resourced by comparison. The lack of standardisation also means that supposedly similar resources from different legacy services are often completely incompatible with one another if required to operate jointly at a single incident.

The desire for legacy fire services to be fully self-contained in terms of special rescue operations has placed a very heavy burden on certain stations, particularly those that are the only wholetime station within a legacy area. Inverness for instance, has water rescue, USAR, foam, mass decontamination, heavy rescue, hazardous materials and command & control resources as well as a high reach appliance within one station. With only a finite number of training hours available per person per year, it is impossible to maintain genuine competency in all of these areas. Put in perspective, there are approximately 300 dedicated training hours available per annum to a wholetime firefighter. It takes 222 hours of training to maintain basic competency in the role of a firefighter, and a further 80 hours just to maintain competence in water rescue, before going on to look at the other attributes that each firefighter must train for.

Line rescue equipment

Using the example of Inverness, it is impossible to maintain competency in such a wide range of skills, and any gaps in training or competency have potential serious implications for firefighter and community safety. There are additional challenges to maintaining a very high number of special resources within a single station. Inverness fire station has 16 different vehicles operating from this one central point, in an attempt to provide a complete fire and rescue response for the Highland region, an area of more than 11,000 square miles. In addition to the training burden associated with each resource, there is a significant testing and maintenance regime that accompanies each vehicle, each item of clothing and every item of equipment.

Another legacy issue associated with special resources is the great variety of equipment that has been procured by each of the legacy services. Budget limitations, and in some cases limited capacity for research and development, have resulted in some equipment being below an acceptable standard for a national fire and rescue service. One example of this is the various types of boat provided for water rescue, and indeed the methods used to mobilise and deploy such resources. In the legacy Dumfries and Galloway area, rigid inflatable boats are stored in a deflated state, and mobilised within plastic containers attached to a gantry system on top of a rescue pump. The outboard motor is located within a separate locker on the appliance, and this arrangement precludes carriage of a 13.5 metre ladder, a standard item of life saving equipment.

On arrival at an incident, the boat requires to be removed from its transit location, carried to the launch site, inflated by use of compressed air cylinders and have the motor attached before any rescue can be attempted.

In direct comparison, water rescue boats in many other areas are stored fully inflated, on a road-going trailer, with the outboard motor and all other equipment permanently attached, ready to be transported by a dedicated 4-wheel drive vehicle to allow ready access at a launch site.

Other resources have equally disparate methods of stowage and transportation. A number of heavy rescue resources around the country are combined with a USAR resource and carried in pods that are transported by a prime mover chassis. This method of transportation is reliable enough, but very slow. The pod requires to be mounted onto the chassis before leaving the station, and always requires to be dismounted at the incident before any equipment can be accessed. The prime mover also needs a very large area of hard standing to accommodate the process of dismounting the pod. Whilst this arrangement allows many areas to claim the availability of a heavy rescue resource, in reality the resource is a much diluted version, with a far slower response time than that provided by a dedicated heavy rescue vehicle such as the vehicle currently located in Easterhouse.

The current USAR provision across Scotland falls far short of the UK national standard. It would appear on the surface that Scotland is very well provided for in terms of USAR teams and equipment, with resources that appear to greatly exceed Government recommendations. However, on closer inspection, none of the teams operating in Scotland has the correct range of equipment, standardised tools or stowage arrangements that would allow us to declare the SFRS with a UK national USAR resource. Apart from the obvious shortcomings in capability that this means for the SFRS, not being a UK standard resource also precludes the SFRS from entering into reciprocal arrangements with fire and rescue services in England, potentially leaving Scotland vulnerable.

Concentrating the existing SFRS USAR assets into key sites around Scotland would serve as the first step towards developing a fully competent USAR response that would stand up to scrutiny and match those resources currently established elsewhere in the UK.

The removal of borders between legacy fire and rescue services, the requirement for more efficient and effective working practices, and the wealth of knowledge that exists across the SFRS must all be factors that are used to ensure a better, more robust and resilient special rescue provision for the communities of Scotland.

6. Water Rescue

Description

This term refers to incidents involving rescue of persons from inland waterways, floodwater and unstable ground. There are a range of water rescue levels within this incident type: shore-based rescue where crews operate from a safe area; wading techniques in flood waters; specially qualified crews entering swift-water or flood environments to affect rescues using tethered swimming techniques; or use of powered boats and associated equipment. The expectation within SFRS is to have the vast majority of crews trained and equipped to carry out shore based rescue, however this report is aimed at the more specialist attributes of rescue from swift water by swimming or powered boat.

Current Position

Water rescue incidents have become more common in recent years, although it is hard to establish whether this is an overall increase in the number people finding themselves in distress in a water environment, or simply an increased awareness by the public and partner agencies of the fire and rescue services' capabilities in this area.

A great disparity currently exists between the training, equipment, storage and deployment methods, and the naming conventions used across Scotland. Powered boats are often carried deflated to incidents, by vehicles designated for a range of uses such as prime movers or standard fire appliances, without any crew welfare provision and with a built-in time delay.

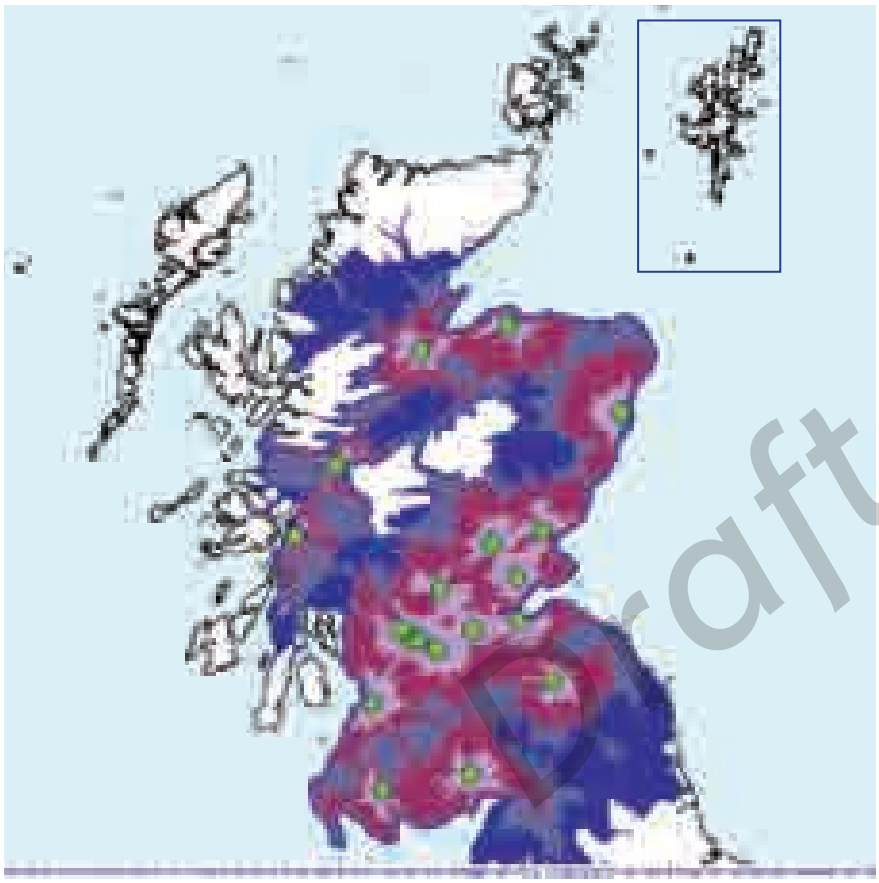
As a result of this, it would be inaccurate to describe all of our existing resources as truly providing a water rescue capability. Of the 16 declared resources, only around 50% are to the standard we would hope and expect; able to provide a rapid response in a range of water-based environments, utilising the full range of approved equipment.

What we plan to do

We recognise an increasing demand for water rescue resources across Scotland, highlighted by some of the tragic events that have occured on our inland waterways, particularly during summer months; and the likelihood of increased rainfall with associated flood potential during wetter winters. Our objective of ensuring equity of access to our resources across the communities of Scotland is a challenging and demanding target in this area. To achieve our targets and to improve our strategic coverage in this field we will deliver the following:

- All resources will have dedicated vehicles with crew welfare facilities, towing permanently inflated boats ready for immediate deployment.
- We will increase the number of fully equipped water rescue stations to 20.
- New resources introduced to Aberdeen, Oban, Fort William and the Scottish Borders to address existing gaps in coverage.
- The existing resource crewed by RDS staff at Annan will be moved to Dumfries to improve strategic deployment and training competence utilising wholetime crews.
- Ensure all crews trained to nationally recognised "team-typing" standards.

Water Rescue - Proposed End State



The adjacent diagram shows the coverage for Scotland following the introduction of new water rescue capabilities in Aberdeen, Fort William and Oban.

*There will also be one further water rescue resource located in the Scottish Borders area.

WATER RESCUE
Elgin
Central (Aberdeen)
Glenrothes
Perth
Kingsway East (Dundee)
Inverness
Oban
Motherwell
Ayr
Polmadie (Glasgow)
Knightswood (Glasgow)
Clydesmill (Cambuslang)
Dumfries
Stirling
Bathgate
Galashiels
Marionville (Edinburgh)
Fort William
Newton Stewart
*Hawick

7. Offshore Firefighting and Support

Description

Our duties and responsibilities on the mainland of Scotland are relatively clear, either statutorily or through custom, practice and community expectation. Our duties in the marine environment are less distinct, but nevertheless require consideration due to the number of inhabited islands and the volume of water-borne traffic around our shores. There are a number of approaches to delivering a response within the marine environment.

The Marine Operations Group (MOG) is the term used to describe trained fire crews that fulfil the SFRS statutory responsibility to deal with incidents on vessels 'alongside' in harbours, ports and terminals. These crews receive enhanced training and some additional equipment to assist them in this task.

Fire and Rescue Maritime Response (FRMR) involves teams with advanced training and specialist equipment responding to fires on ships and vessels at sea, being transported by helicopter or watercraft as appropriate.

Only one remaining FRMR group (previously MIRG) currently operates, from Greenock, and responds to fires on ships at sea, with personnel trained in air and sea transport techniques. Whilst initially funded by Government through the Maritime Coastguard Agency (MCA), if continued, this provision now requires to be supported fully from within the SFRS budget.

What we plan to do

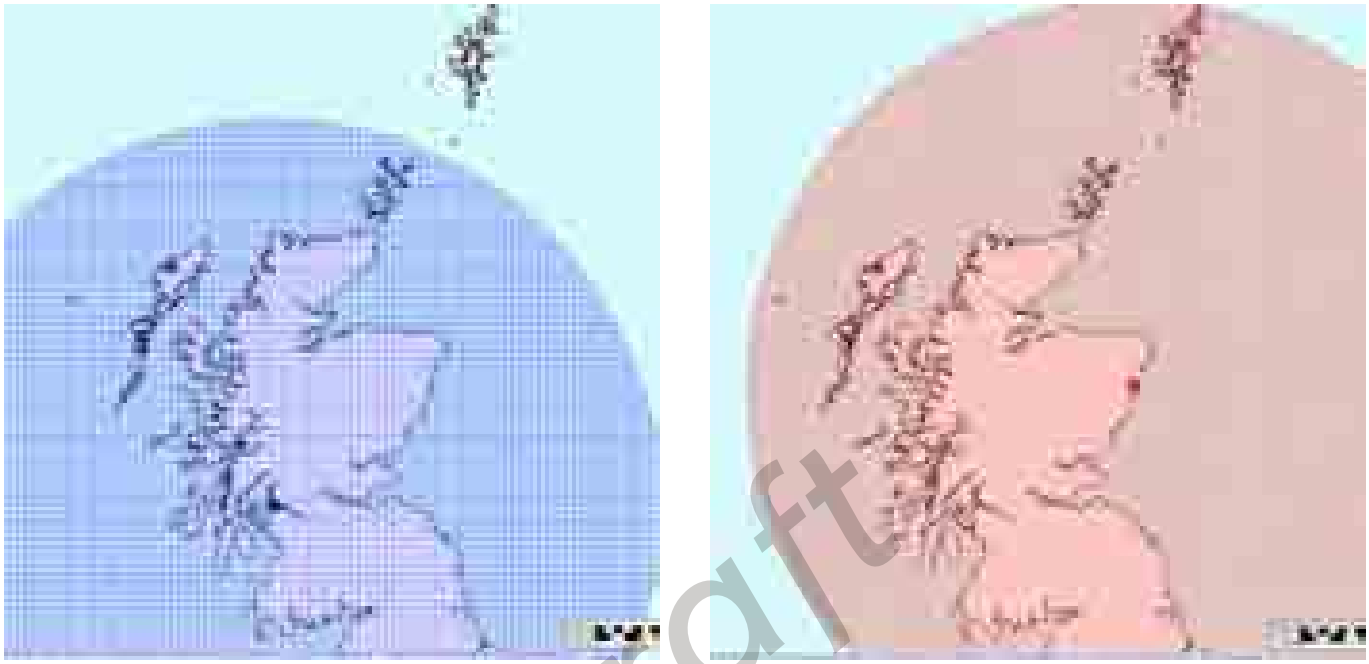
12 stations around Scotland will be selected to carry out the MOG role. A MOG station may be expected to attend incidents outwith its own area of responsibility and will require only limited additional equipment in addition to that carried on a standard rescue pump. MOG teams will only attend incidents in ships that are:

- moored alongside.
- in dry dock.
- under repair.
- under construction.

A separate project team consisting of representatives from the Response and Resilience Directorate and Service Delivery Areas will determine the locations of the 12 MOG stations.

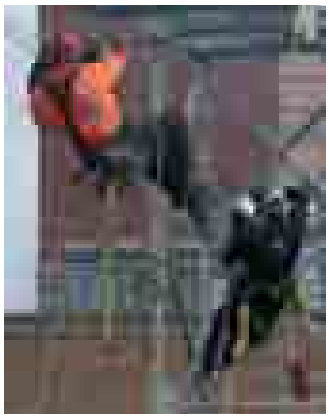
The FRMR team will also be used in the delivery of operational support for remote, rural and island communities, by providing senior officers for incident command and additional firefighting crews for larger or more complex incidents in locations where this is otherwise difficult or impossible to achieve. This will include gaining water or airborne access to remote and island communities, and is part of a wide ranging policy addressing such issues.

A feasibility study is currently ongoing looking into creating a second team, based in the North East of Scotland, to provide the same level of cover for the North and North East coasts, Orkney and Shetland Islands.



The diagrams above show the coverage afforded by Coastguard Helicopter from bases in Greenock and Aberdeen. All Coastguard helicopters have ranges in excess of 200 miles (400 round trip with 30 minutes operating time on site) which allows for marine firefighting teams or support teams for remote incidents to be transported anywhere on the Scottish mainland and to any of our inhabited islands.

8. Line Rescue



Description

Line or Rope Rescue is a form of technical rescue from height or below ground level, which involves the use of ropes, harnesses, anchoring and hauling devices. For SFRS purposes this is principally limited to urban and structural locations as the other categories of wilderness, mountain and cave rescue are largely the domain of other agencies.

Expectation within the SFRS is that the majority of our crews will be trained and equipped to Safe Working at Height (SWAH) standard, which equips crews to operate safely in such environments, including gaining access to casualties, but provides limited scope for the rescue and retrieval element. This report considers the need for an enhanced level of strategically placed resources, trained and equipped to handle the more complex rescues where height is a factor.

Current Position

SFRS inherited a position whereby seven of the eight legacy services provided some form of rope rescue facility. However, the levels of training, the terminology and the equipment used differ significantly across the country.

The upper end of the capability includes teams trained and equipped to deal with complex technical rescues including from open structures such as tower cranes; or involving horizontal and vertical stretcher lowers and raises. An enhanced SWAH capacity forms the lower end of the capability, which allows simple top-down access in order to stabilise the casualty until a full technical rope rescue team arrives, or if the situation dictates the possibility may exist to carry out a simple snatch rescue.

At present only teams in Edinburgh, East Kilbride and Lochgelly could be formally considered to be technical rope rescue teams available at all times. Additionally, Perth and Kingsway East (Dundee) are trained to a standard somewhere between the higher and lower ends of this capability, specifically to augment and enhance their water rescue provision. Other teams are either at the lower ends of the range, or operate the retained duty system (RDS) which severely compromises the ability to maintain competency under existing training and attendance regimes for RDS crews.

Large parts of Scotland, therefore, presently have limited or no access to technical rope rescue teams, other than through a disparate range of contracts and memoranda of understanding with external companies or agencies.

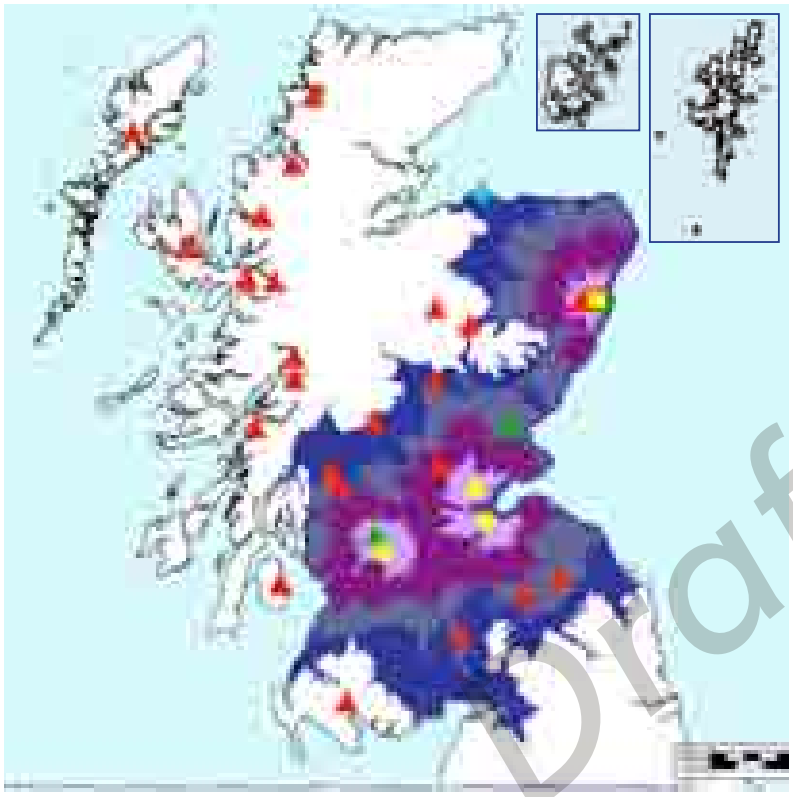
What we plan to do

The key objective for this attribute is to ensure we have competent crews, suitably trained and supported to carry out these complex tasks safely and successfully. This requires the implementation of a number of basic principles:

- Line rescue will be deployed from wholetime, multi-appliance stations to ensure the best use of resources in maintaining the onerous training requirements and thereby improving resilience.
- Where possible, with the exception of high-reach appliances, no competing specialist attribute will be deployed from a line rescue station.

The resultant recommendation is that 4 dedicated line rescue stations will be created. Teams will be maintained at East Kilbride, Lochgelly and Tollcross (Edinburgh), whilst a new team will be introduced at Altens (Aberdeen), giving a more strategic distribution of line rescue resources with much improved coverage for the whole of Scotland. In addition Perth and Kingsway East (Dundee) will continue with their limited line rescue resource, principally aimed at supporting their key water rescue capability. Newcraighall (single pump) and Falkirk (Recall To Duty staff) will be removed once Altens is fully operational.

Line Rescue - Proposed End State



This map shows the coverage for line rescue in Scotland that is achieved by introducing a new SFRS team in Aberdeen. A register of external rescue agencies including Scottish Mountain Rescue will be kept and will assist in providing a resilient line rescue response in more remote areas.

LINE RESCUE
East Kilbride
Lochgelly
Tollcross (Edinburgh)
Altens (Aberdeen)

Key - Travel Time

- *20 minutes*
- *40 minutes*
- *60 minutes*
- *90 minutes*

Resource Key

- *SFRS dedicated line rescue teams*
- *Scottish Mountain Rescue Teams and Search and Rescue Teams*
- *Police Mountain Rescue Teams*
- *RAF Mountain Rescue Team*

9. High Reach

Description

A standard fire appliance carries a number of ladders with a maximum reach to the 4th floor of most buildings. Dedicated 'high reach' appliances are used to address the need for firefighting and rescue in the taller buildings that are common in urban environments

A diverse range of high reach appliances are available; including turntable ladders (TL) , hydraulic platforms (HP) and aerial ladder platforms (ALP). In recent years combination appliances known as aerial rescue pumps (ARP) or combined aerial rescue pumps (CARP) have become a viable alternative, offering the capability of performing conventional pumping appliance tasks whilst also having a high reach capability.

Current Position

There are currently 27 'high reach' appliances available across Scotland, a combination of ALPs, ARPs, HPs and TLs. Data Analysis and risk modelling have shown that the ideal spread of high reach appliances is broadly in line with the actual current distribution, although there are small gaps worthy of further consideration, and some appliances that are no longer considered fit for purpose.

The existing spread of appliance types, however, is based on historical preference and taste, and includes little acknowledgement of the most suitable type for individual risks or concentration of risk. In some areas, Edinburgh, for example, the existing fleet is predominantly turntable ladders and all elderly and at risk of becoming obsolete. ARPs are mostly clustered in the West at the moment, and those located at Dumfries and Stranraer are deemed unfit for purpose due to design issues.

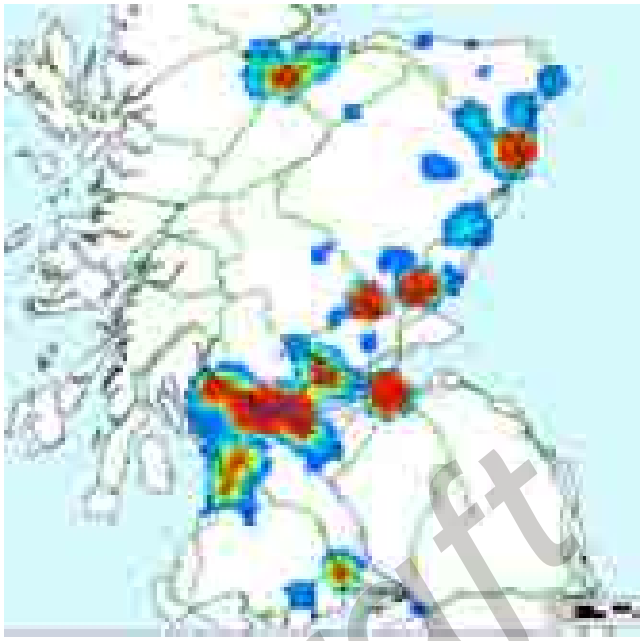
What we plan to do

A replacement strategy has commenced with the procurement of 6 new chassis to be built as high reach appliances. These will be distributed as necessary to replace older appliances as they reach 'end of life'. The overall number of high reach appliances available across Scotland will not change initially, although there will be an overall increase of one additional height appliance once the new build vehicles become available. Nationally, there will be changes to locations in some cases, and an improved distribution of vehicle types.

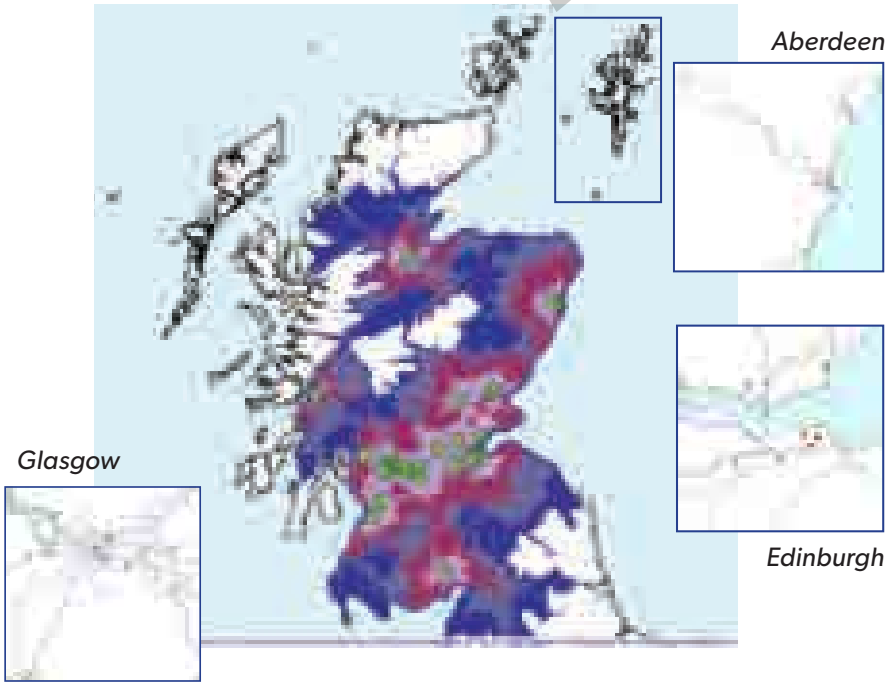
Specific changes at present will be:

- The existing ARPs in Dumfries and Stranraer will be removed, with a replacement vehicle reintroduced immediately to Dumfries only. Risk profiling and historical activity demonstrates limited added value in siting a high reach appliance in Stranraer.
- Replacement of the existing Turntable Ladder at Sighthill with an Aerial Rescue Pump, allowing disposal of one vehicle which is close to 'end of life".
- Potential allocation of a high reach appliance to Livingston when one becomes available following delivery of the new build appliances .
- Redistribution of some appliance types to meet longer term distribution model (plan includes having at least one ARP and one ALP in each of Scotland's 4 largest cities).

The adjacent diagram shows incident activity over a 4 year period (2009/10 – 2012/13) where high reach appliances were mobilised.



Height Appliance - Proposed End State



Key - Travel Time

- *20 minutes*
- *40 minutes*
- *60 minutes*
- *90 minutes*

The above diagram shows the coverage across Scotland achieved with the proposed distribution of height appliances.

HEIGHT APPLIANCES
Central (Aberdeen)
North Anderson Drive (Aberdeen)
Blackness Road (Dundee)
Macalpine Road (Dundee)
Inverness
Perth
Oban
Kilmarnock
Ayr
Dumfries
Clydebank
Maryhill (Glasgow)
Polmadie (Glasgow)
Springburn (Glasgow)
Greenock
Motherwell
Coatbridge
Clydesmill (Cambuslang)
Johnstone
Paisley
Tollcross (Edinburgh)
McDonald Road (Edinburgh)
Crewe Toll (Edinburgh)
Sighthill (Edinburgh)
Falkirk
Dunfermline
Kirkcaldy
Livingston

10. Rescue Pump

Description

This is now considered the standard fire appliance in Scotland, carrying a full crew of firefighters providing the first response to all emergency incidents. The term "rescue pump" is used to indicate that these appliances carry an enhanced range of equipment to deal with the wider array of activity now expected of the service.

A traditional firefighting appliance was equipped with breathing apparatus, hose, water, ladders and incorporated a firefighting pump to allow rapid intervention in the event of fire. Over recent years this has been gradually developed to now also include a range of rescue equipment such as airbags, hydraulic cutters, spreaders and rams to provide a capability to effect rescue from road traffic collisions and other emergency incidents.

Current Position

The majority of appliances in the SFRS fleet are already fully equipped rescue pumps. This carries the distinct advantage of ensuring at least one rescue pump is mobilised in the first stages of the vast majority of incidents across Scotland; and further negates the requirement to routinely send specialist vehicles unless requested by on-scene incident commanders.

Having said this, some significant gaps exist in the distribution of these appliances, notably in the Highlands and Islands areas. Although these areas historically experience very low activity, they are also often very remote and difficult to support with additional crews or specialist equipment. Priority requires to be given to upgrading the fleet in these areas to ensure a better spread of available rescue pumps.

Efforts to deliver these improvements however, are not assisted by the incredible range of configurations and specifications inherited in the existing arrangements. Differences in equipment, stowage, vehicle charging and radio installation etc, make the task of standardising and rotating the fleet, to plug these gaps, very time consuming and expensive.

What we plan to do

The SFRS has developed a rescue pump programme which will deliver on a number of key objectives:

- To ensure that fully equipped rescue pumps are allocated to those stations that do not have such a provision at present, with priority going to achieving at least one rescue pump in all multi appliance stations.
- To standardise the wide range of appliance configurations and specifications inherited across Scotland.
- To deliver a rolling programme of vehicle replacement to maximise the use of all of our fleet and ensure an efficient and effective servicing and maintenance regime. This involves rotating the fleet around different stations, rather than permanently assigning a vehicle to a single station which often results in massive discrepancies between appliance workloads and mileages and is not an efficient use of our resources.

In order to achieve this, a total of 48 new appliances are currently under construction, with 16 already delivered as of March 2014. A target of 30 new appliances per year has been set, which although challenging, will deliver a first class fleet of emergency vehicles across Scotland.

As can be seen in the image below, a standard SFRS rescue pump carries a considerable amount of dedicated rescue equipment. Whilst full standardisation of this equipment will take some time to achieve, the list of equipment that follows is typical of rescue pumps across all areas of Scotland:

- Hydraulic cutters, spreaders, rams and pedal cutter
- Portable 1.6 tonne wire rope winch
- 2 x high pressure air bags (20 and 40 tonne capacity)
- Vehicle stabilisation equipment (blocks and chocks)
- Casualty protection and sharps protection
- Rescue board (stretcher)
- Trauma kit (first aid and oxygen therapy equipment)
- Defibrillator
- Lifejackets (crew safety)
- Throw lines and hose inflation kit (shore based water rescue)

This equipment provides a comprehensive rescue capability for shore based water rescue, road traffic collisions, incidents where persons are trapped and all incidents where casualties require immediate trauma care.

11. Heavy Rescue/Urban Search and Rescue

Description

Although the standard equipment carried on a rescue pump allows us to successfully deal with the vast majority of incidents, there remains a small number of occasions which require the use of a wider range of heavy duty rescue equipment. Such incidents include multiple vehicle road traffic collisions; large transport incidents involving commercial vehicles, trains, trams or aircraft; and industrial work place entrapments. Traditionally these types of incidents were categorised as 'Heavy Rescue'. In response to the threat of terrorist attack in the UK, principally following the 09/11 bombings in the USA, a New Dimensions programme was set up to equip emergency services to conduct Urban Search and Rescue (USAR) operations in collapsed buildings, and to respond to major non-road traffic transportation incidents such as rail or air incidents.

The UK Government's National Security Strategy identifies and categorises areas of greatest risk, typically declaring major cities as model response sites with agreed minimum response levels. These sites require dedicated resources, including USAR, to be available and ready for use in the event of a relevant incident and within specific time limits. Glasgow, Edinburgh, and to a lesser extent Aberdeen, feature within the planning assumptions for USAR response at the present time. However there is a review of UK-wide USAR resources which may have an impact on equipment and location requirements in the future.

The two categories of Heavy Rescue and USAR are not identical, but can have significant similarities in the skills and equipment required. In this regard this report will consider both within a single section which, when taken together with the previous section on Rescue Pumps, will present an overall package of rescue capability.

Current Position

Most legacy fire and rescue services in Scotland, prior to the establishment of the SFRS, were supplied with vehicles, equipment and training by the Scottish Government to undertake USAR activities. The existing position inherited by SFRS is a confusing mixture of these resources together with dedicated heavy rescue vehicles or demountable pods which can be uplifted to scene by a prime mover vehicle.

Activity levels for these types of incidents are thankfully low, commonly following the major road networks where RTCs involving commercial vehicles account for the majority of activity, as shown in the map overleaf. Genuine USAR related incidents are rare, with only approximately 15 partial building collapses over the period of 2010-2013, of which the Clutha Bar incident was most notable.

The current position reflects the individual deployment and risk profiling of each of the 8 legacy services in Scotland, set against the constraints of the local geographical boundaries. It does not currently satisfy the UK model response sites planning assumptions; nor the strategic, risk-based requirements of Scotland as a whole. It also does not adequately consider the training requirements and capacity of the crews currently providing these resources

The relatively random nature of resource disposition at present gives an impression of an over-provision for this type of high impact but low occurrence activity. The disparity of procedures, equipment, training and qualifications of USAR personnel in Scotland, however, has prevented the declaration of full resource availability in support of UK-wide planning assumptions. For example, SFRS inherited a position whereby we have over 500 personnel trained to "tool operator" standard, with only 100 trained to the higher level of "technician". A requirement exists to redress this balance of skills, to provide a smaller cadre of better qualified personnel to fully meet interoperability expectations. Furthermore, a structured approach is required to provide, in a strategic and efficient manner, the wide range of equipment necessary and available to deal with USAR and Heavy Rescue incidents.

What we plan to do

The future strategy for SFRS sees a "package" of rescue capability, encompassing rescue pumps, heavy rescue vehicles and USAR resources. Including increasing our footprint of rescue pumps, as already outlined, we believe that altogether this package will ensure an optimum coverage to meet the inherent risk and anticipated demand.

Dedicated heavy rescue vehicles will be stationed in the following areas, to give cover to specific risks and also to provide a strategic footprint across Scotland:

- Inverness – in recognition of the A9 trunk road corridor and the relative remoteness from supporting resources.
- Stirling – due to its strategic central location and good access to major trunk roads heading north.
- Glasgow (Easterhouse) – recognising the major transport links of the Central Belt and the particular risk presented by the Underground system.
- Edinburgh (Sighthill) – again in recognition of the greater demands and activity levels of the Central Belt, and specifically the new Edinburgh tram system.
- Dumfries - addressing the relatively high level of RTC activity on the A75 trunk road and the relative remoteness of the southern parts of Scotland.

In addition, USAR resources will be deployed from:

- Clydebank, Kilmarnock and Cumbernauld to satisfy model response planning for Glasgow and Central Belt.
- Newcraighall/Dalkeith to satisfy model response planning requirements for Edinburgh and Central Belt.
- Aberdeen and Dundee to provide suitable equity of access balanced against our capacity of stations and crews to maintain competency.

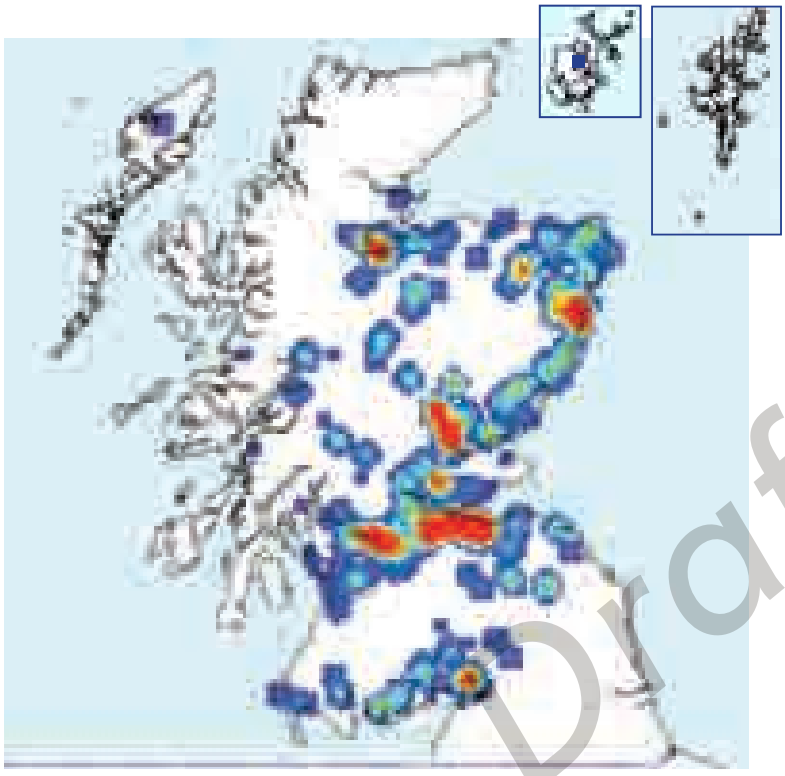
These USAR resources will also be mobilised as heavy rescue attributes should the incident location dictate, resulting in an overall picture of heavy rescue cover which satisfies all anticipated risks and demand levels.

These heavy rescue resources and USAR resources are sent as a supplement to well-equipped Rescue Pumps already in attendance. Taken together with the full package of rescue pumps, this represents a significant improvement in current arrangements, with a proportionate distribution of these assets across all areas of need in Scotland.
This will ensure a balance of the provision of national coverage in line with Scottish Government expectations in relation to the communities of Scotland having equity of access to specialist resources, and also allows Scotland the capacity to respond to a USAR event within and outwith Scotland whilst ensuring resilience.

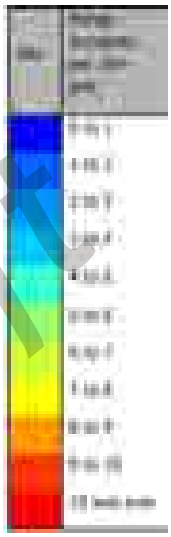
This recommended level of resilience ensures capacity for major events such as the Commonwealth Games, whilst also allowing these units to provide support for the rescue pump and heavy rescue package previously outlined, without compromising the USAR resource declaration.

These units will all be deployed using a dedicated vehicle, as opposed to the current range of deployment methods such as demountable pods. Crews will be trained to technician level as demanded by UK national resilience policy, and the resources will be deployed from stations which are not overburdened with a number of specialist resources, as at present, and can therefore devote the necessary time for training to ensure competency in this complex arena.

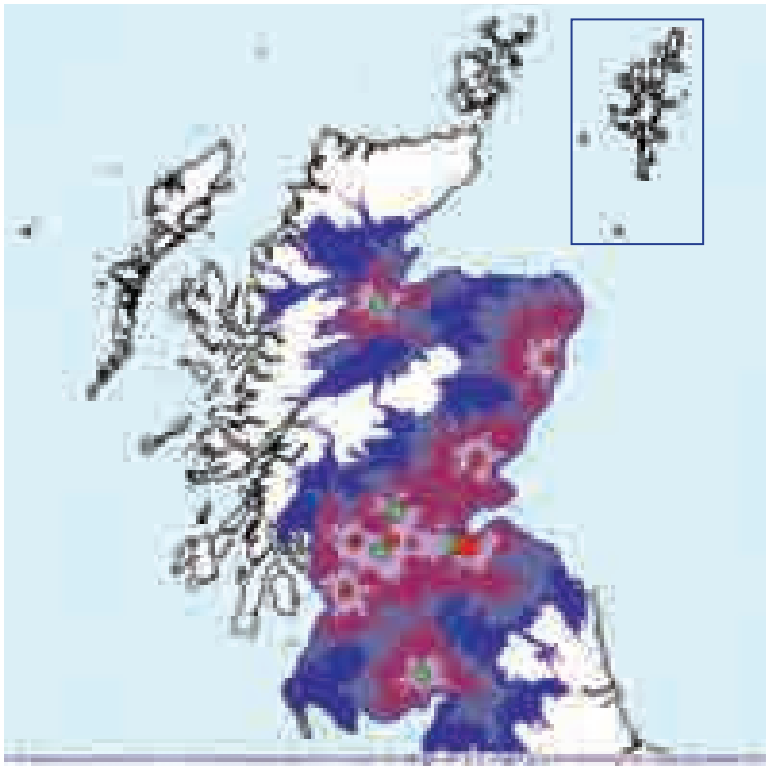
Combined Urban Search and Rescue and Heavy Rescue incident activity



The adjacent diagram shows the incident activity for large vehicle RTCs and partial building collapses across Scotland in the period 2010-2013. As the key below demonstrates this is a map of very low activity levels.



Combined Urban Search and Rescue and Heavy Rescue resource coverage



The adjacent diagram shows the coverage across Scotland that is achieved when heavy rescue resources and USAR resources are both made available for such incident types.

HEAVY RESCUE VEHICLE
Inverness
Sighthill (Edinburgh)
Easterhouse (Glasgow)
Stirling
Dumfries

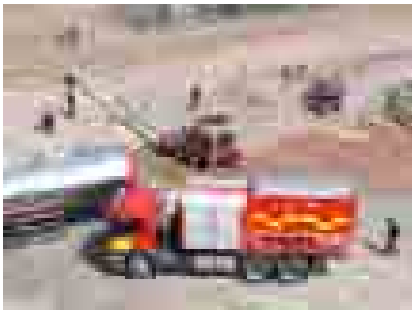
USAR
North Anderson Drive (Aberdeen)
Kilmarnock
Clydebank
Cumbernauld
Newcraighall and Dalkeith combined
Macalpine Road (Dundee)

Key - Travel Time

20 minutes *60 minutes*

40 minutes *90 minutes*

12. High Volume Pumps



Description

High Volume Pumps (HVP) and their associated equipment are capable of pumping vast quantities of water over large distances. These highly specialist resources, provided under the New Dimensions programme like Mass Decontamination, DIM and USAR, were to deal primarily with mass flooding which has shown itself to be an increasing problem in recent years, but are also effective at delivering very large quantities of water for firefighting purposes when required. The HVP and hose carrying/ laying equipment that complements it, is carried on a Prime Mover chassis to the incident ground where the crew will generally remain at the incident to operate the equipment and ensure continued reliable pumping operations for the duration.

Current Position

There are four HVPs in Scotland, located at Elgin, Clydesmill (Cambuslang), Falkirk and Hawick. Elgin is already a prime mover station, and is also in an extremely good strategic location to cover the oil industry risk in Aberdeen as well as flooding risks in the Speyside and Inverness area. Clydesmill (Cambuslang) and Falkirk provide cover for the majority of Scotland's heavy industry including major sea ports, ship building yards and oil and chemical production. Both of these stations are also located near to the motorway network that allows rapid access to all of Scotland's trunk roads heading across the Central Belt and to the North, Ayrshire and the Borders. Hawick is a rural and relatively remote location to the South of Scotland, located only 15 miles from the border with England. Whilst there is a recognised flood risk in the Borders area as with most other areas, the siting of an HVP in Hawick, one of only 4 in Scotland, is closer to Carlisle, Penrith and Newcastle than it is to Glasgow, Stirling or Dunfermline.

What we plan to do

Similar to all resilience assets provided under the New Dimensions programme, the anticipated use of HVPs is classed as being low frequency but high impact. Originally provided to respond to major flooding events, their abilities to add considerable value to certain firefighting operations has widened their expected use, and are now considered a vital resource for controlling fires and to allow the cooling of large oil storage tanks such as those found at the Grangemouth oil refinery, Finnart oil terminal and Dalmeny tank farm.

The requirement to provide an HVP in response to major flooding can generally be expected as part of a long term solution to a protracted event, whereas the use of HVPs at a tank fire would require as swift a response as possible to ensure rapid intervention and reduce the risk of the incident escalating. At Grangemouth in particular, the 'domino' effect is recognised in emergency planning scenarios due to the close proximity of several large plants and high risk processes in a single site. A fire in one plant can quickly spread to neighbouring plants if rapid intervention cannot be achieved.

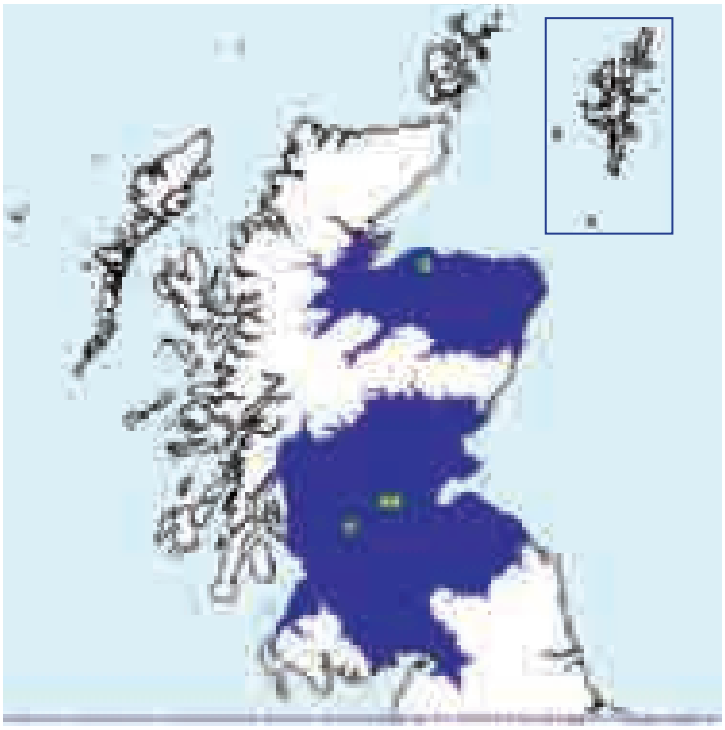
To reflect this, the following plans are considered to provide the best utilisation of these resources across Scotland:

- All HVPs will be located in wholetime stations, and where possible, stations without additional special resources.
- In recognition that a large tank fire at any of the above locations would require more than one HVP to successfully mount a firefighting attack and prevent a major explosion or boil over scenario from occurring, strategic locations will be used.
- The existing HVP at Hawick will be relocated to Alloa to ensure its availability to address the significant industrial risk within this area, whilst maintaining the capability to respond to flooding incidents in the Borders as required and within reasonable timescales for this type of incident.
- The remaining HVPs will be maintained in their current locations which are considered suitably placed to address the anticipated risks and with good access links to all areas.

The diagram on the left shows the coverage currently achieved by a High Volume Pump located in Hawick with a 90 minute mobilising time. It can be seen that a significant part of this area is outside of the SFRS service area.

The adjacent diagram shows the coverage that can be achieved for Scotland with HVPs located at Elgin, Clydesmill (Cambuslang), Falkirk and Alloa. This distribution gives very good coverage to address Scotland's flood risk, whilst ensuring the availability of HVPs close to our major industrial fire hazards.

HIGH VOLUME PUMPS
Elgin
Clydesmill (Cambuslang)
Falkirk
Alloa



13. Mass Decontamination

Description

Mass Decontamination (MD) is the procedure used to remove contaminants from very large numbers of people in the event of industrial, accidental, or intentional contamination; by chemicals, biological, radiological material, or other substances potentially damaging to health. As with USAR and others, this equipment was supplied under the New Dimensions programme. These resources, again like USAR, form part of a UK-wide response capability which is focused on our major cities as being the greatest risk.

Current Position

As previously discussed for USAR, the position inherited by SFRS is the legacy desire and requirement of each previous service to provide these resources within their geographical boundaries. This position takes little account of risk or overall planning. In addition, the current situation presents additional risks in terms of community and firefighter safety as crews in some areas are overburdened with complex specialist equipment which compromises their ability to train adequately for each attribute. Once again, these resources are stowed and deployed using a range of methods which lack any consistency and gives cause for concern regarding actual availability and competency.

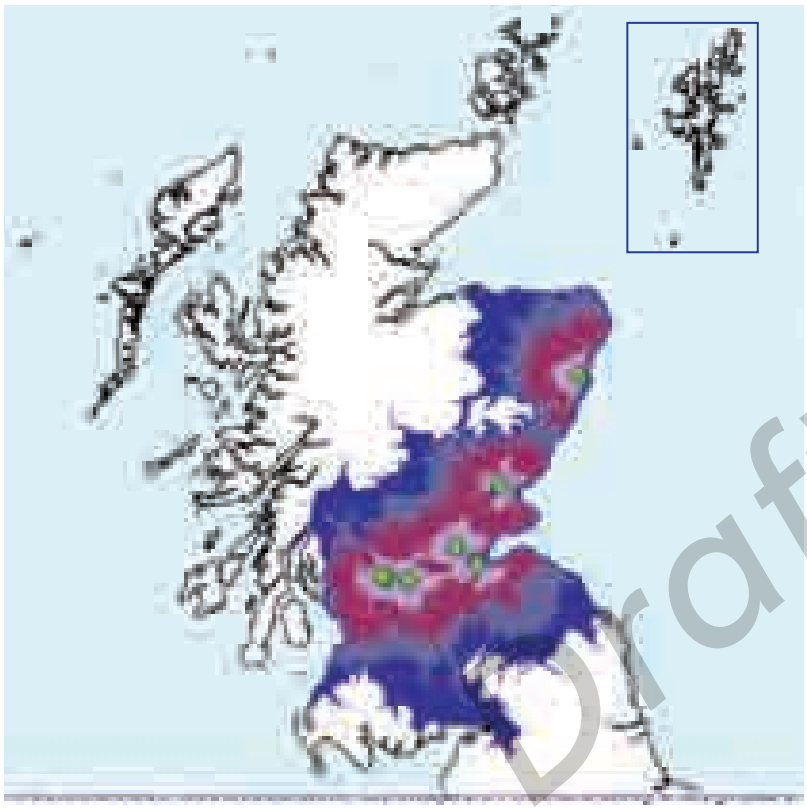
Further, the inherited position was based on a set of planning assumptions contained within a UK Government concept of operations which have recently been updated to include "interim decontamination" which places a lower expectation on the numbers of affected casualties and subsequently eases the necessary response arrangements. Interim decontamination involves the use of standard fire service equipment, including hosereels and ladders, to provide a simple but effective method of decontamination for smaller numbers in the early stages of an incident. Every fire appliance and crew in Scotland already has the means to provide this form of decontamination prior to the arrival and set-up of full Mass Decontamination equipment. As already stated within the section on USAR, an ongoing review of UK-wide planning assumptions could have an impact on future resourcing and location requirements.

What we plan to do

In line with the recommendations in the previous section under USAR, this report identifies a requirement for 7 stations to be fully trained and declared Mass Decontamination units in Scotland, in line with requirements to contribute to UK-wide planning and support. Basic principles will be adopted:

- All MD assets will be deployed using dedicated vehicles as opposed to the range of deployment options currently provided.
- Recognition is given to the implications of interim decontamination.
- Once again, training for competency is a fundamental criterion upon which the following recommendations are based, with a clear desire to avoid the existing position where stations across Scotland are expected to operate a range of specialist attributes, such as USAR and MD, together. Alternative stations have been identified to ensure an appropriate distribution model can be achieved which will provide the necessary, risk-based cover delivered by competent crews:
    - Glasgow and the Central Belt will be covered by Coatbridge, Springburn (Glasgow) and Maryhill (Glasgow).
    - Edinburgh and the Central Belt will be covered by Dunfermline and Crewe Toll (Edinburgh).
    - Central (Aberdeen) and Blackness Road (Dundee) will have units to complement and support the USAR resources strategically placed to cover the risks within Scotland's remaining cities.

Mass Decontamination - Proposed End State



Key - Travel Time

- *20 minutes*
- *40 minutes*
- *60 minutes*
- *90 minutes*

The adjacent diagram shows the proposed distribution of Mass Decontamination resources across Scotland and the coverage that will be achieved.

MASS DECONTAMINATION
Central (Aberdeen)
Crewe Toll (Edinburgh)
Coatbridge
Dunfermline
Blackness Road (Dundee)
Springburn (Glasgow)
Maryhill (Glasgow)

14. Detection, Identification and Monitoring Vehicles (DIM)

Description

In conjunction with USAR and MD above, the purpose of a DIM capability is to provide enhanced detection support, via mobile laboratory, in the event of serious chemical, biological, nuclear and radiological incidents. It also has a significant part to play in any mass decontamination incident and can support USAR, Hazmat and flooding incidents.

Current Position

There are 4 DIM vehicles in the SFRS, all provided by Scottish Government resilience. They are currently located at North Anderson Drive (Aberdeen), Blackness Road (Dundee), McDonald Road (Edinburgh) and Springburn (Glasgow). These resources are currently deployed in a range of methods, most often by utilising flexi-duty officers to provide the vehicle and to act as Hazardous Material advisers. This commonly requires officers to travel considerable distances to uplift the vehicle and proceed to the incident, with resultant delays in deployment.

What we plan to do

The plan is to maintain the same number of DIM vehicles, but to increase and formalise the role they play within the wider hazardous materials context, as will be discussed in the next section. The plan will follow the basic principles of:

- Retain a good geographic spread across Scotland, but follow the overarching principle of this report to ensure the vehicles are not located at stations which are potentially overburdened.
- Operate from stations with wholetime crews who will be responsible for weekly testing and maintenance of the DIM vehicle and its associated equipment. They will also be tasked with transporting the vehicle to the incident ground and providing necessary assistance in setting up equipment.
- In fulfilling the criteria above and to fit in with the national model of specialist resource distribution, DIM vehicles will be located at the following stations:

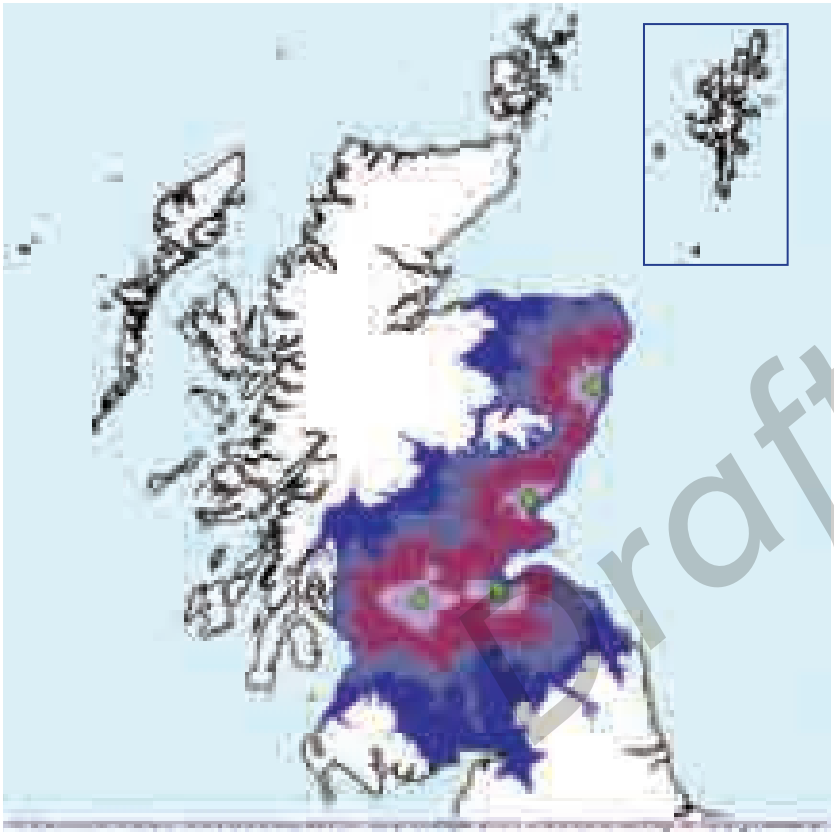
  North Anderson Drive (Aberdeen)

  Balmossie

  McDonald Road (Edinburgh)

  Bishopbriggs

Detection, Identification and Monitoring Vehicles - Proposed End State



Key - Travel Time

- *20 minutes*
- *40 minutes*
- *60 minutes*
- *90 minutes*

The adjacent diagram shows the coverage that will be achieved with the proposed distribution of DIM resources.

DETECTION, IDENTIFICATION AND MONITORING
North Anderson Drive (Aberdeen)
Balmossie
McDonald Road (Edinburgh)
Bishopbriggs

15. Hazardous Materials and Environmental Protection

Description

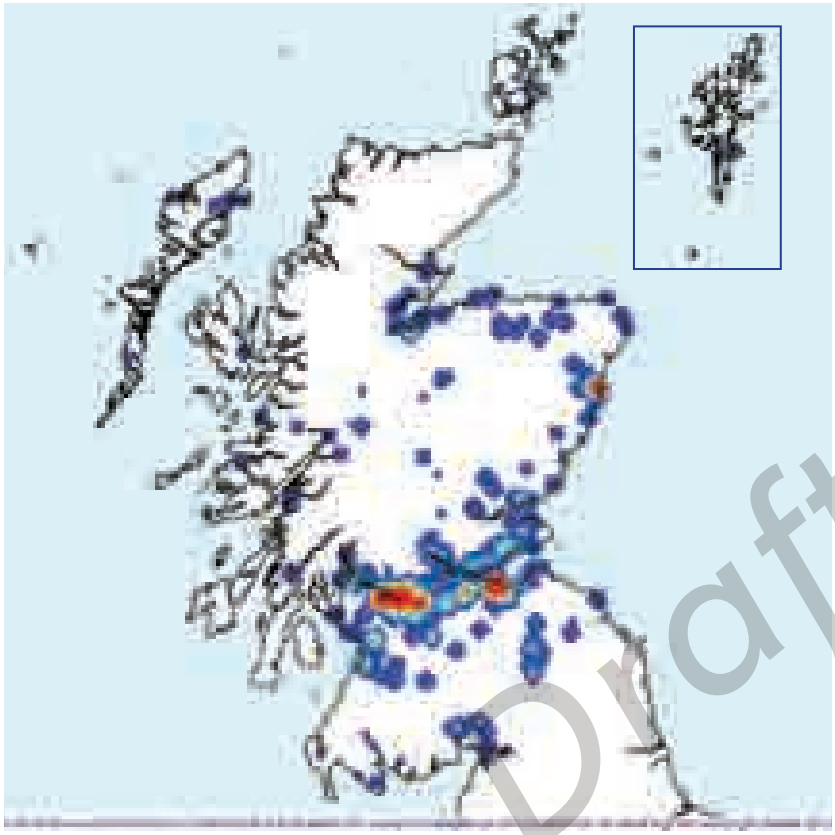
The term Hazardous Materials (Hazmats) refers to incidents involving any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. Fire services have for many years adopted plans and systems to manage such incidents through identifying the substance where possible, neutralising the hazard and protecting the environment as far as possible. This approach now overlaps substantially with the DIM arrangements detailed above, particularly where the hazardous material involved is unknown or has not been identified.

Current Position

Again the inherited position is widely varied across Scotland, ranging from formal arrangements with external scientific advisers to provide 24/7 support on the incident ground; to less formal supporting arrangements or total reliance on service personnel with Hazmats training. The existing 4 DIM vehicles are currently supported by a total of 11 Hazmat/Environmental resources across the SFRS. Of these, 8 are demountable pod systems.

What we plan to do

The recommendation is to formally merge the DIM and Hazmat attributes, providing an attendance which includes suitably trained officers supported by external advice where deemed necessary, to all relevant incidents. In addition to the 4 DIM vehicles already discussed, we plan to retain the 3 dedicated vehicles at Forfar, Kilsyth and Hamilton. The remaining 8 demountable pods will be rationalised to 4, strategically sited at Elgin, Perth, Dunfermline and Renfrew fire stations, to be transported as required by Prime Movers which will be fully detailed in the following section. We believe this approach will provide more than adequate cover for the risk profile and expected activity, standardising and improving our ability to manage these incidents.



This diagram shows the levels of 'Hazmat' incident activity in Scotland over 4 fiscal years (2009/10 – 2012/13).

Key	***Incidents per 2km square***
	0 - 7.9
	8 - 15.9
	16 and over

HAZMAT
Elgin
Perth
Dunfermline
Renfrew

16. Prime Movers

Description

A 'Prime Mover' is a vehicle which is able to transport a range of demountable pod units, dependent on the requirements of a particular incident. This arrangement allows us to accommodate and mobilise a number of different attributes from a single location.

Current Position

A wide array of resources across Scotland has been configured in this manner, including: High Volume Pumps, environmental support units, welfare units and incident support equipment. Additionally, a number of the previously detailed resources such as USAR, MD, Command and Control and Heavy Rescue equipment have been mobilised using this arrangement in some areas.

In some situations this has been borne out of necessity given the range and number of activities within the remit of the fire and rescue service; and the capacity, resources and geographical boundaries of the legacy services. Compatibility issues also prevail between the differing types of chassis and pod equipment. A key benefit of the creation of the SFRS is the removal of many of these constraints, and the opportunity to review the deployment of all specialist resources. As outlined in previous and subsequent sections, this report recommends a number of resources such as USAR, MD, Water Rescue and Command vehicles are no longer deployed in this manner.

What we plan to do

This report recommends strategically locating a number of sites which will adopt the prime mover and pod arrangement, with a consistent methodology applied to the type of resources to be included. There should be 4 key prime mover sites in Scotland located at:

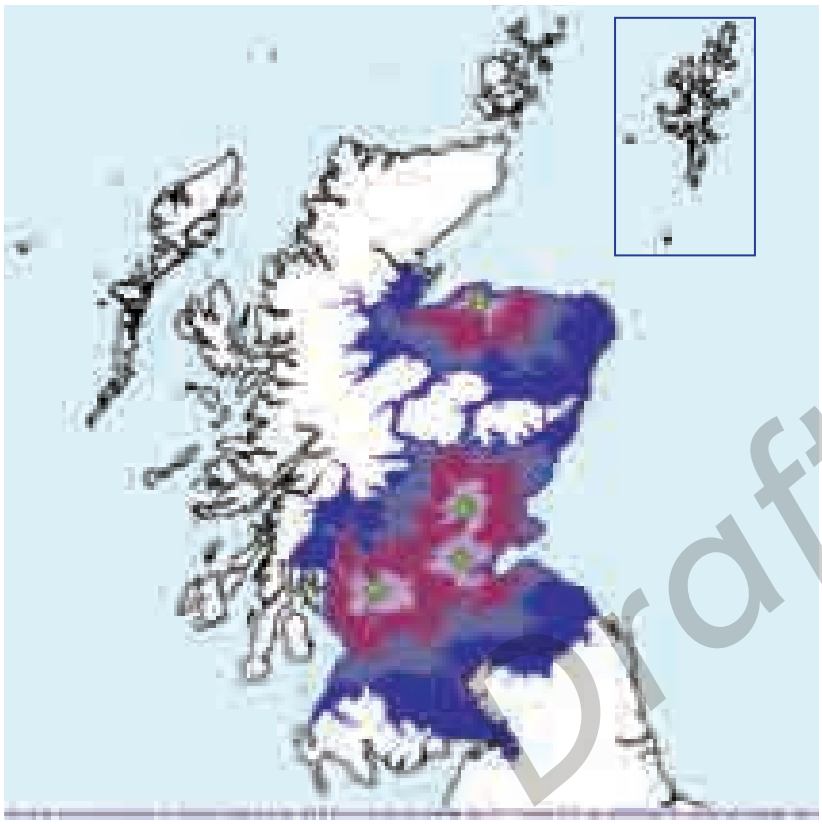
- Elgin
- Perth
- Renfrew
- Dunfermline

Each of these stations should be allocated prime mover chassis that are compatible with the New Dimensions pods. Each of these stations will also be allocated the following pods:

- Foam
- Welfare
- Environmental Protection
- Flood Response
- Incident Response

This arrangement will create a standard model across Scotland which will enhance the services available in all areas, and improve the safety of communities across the country.

Prime Movers - Proposed End State



Key - Travel Time

- *20 minutes*
- *40 minutes*
- *60 minutes*
- *90 minutes*

The diagram adjacent shows coverage across the SFRS area that can be achieved with prime movers within 90 minutes.

PRIME MOVERS
Elgin
Perth
Renfrew
Dunfermline

17. Command and Control

Description

The provision of enhanced command and control support on the incident ground is essential to securing community and firefighter safety at incidents which are large, protracted or complex. Incident Command ensures that effective spans of control are maintained and that effective communications are in place between individuals and teams from the SFRS and from partner agencies. Command Units are a method of providing this enhanced command and control support on the incident ground, by transporting communications equipment and trained personnel to the incident location, and creating a hub for command activities. This assists the incident commander to gather information and create plans, to document necessary information, and to record key decisions and actions throughout the incident.

Current Position

There are currently 11 operational command and control units in Scotland, with a further vehicle build recently completed, but not yet allocated to a station. Of the 11 operational units, some are pods, some are dedicated vehicles, and one is based on a trailer which is towed by a tractor unit and requires a class 1 licence to drive.

Command and Control vehicles enhance our management of incidents but are not themselves considered to be first line, vital elements of ensuring community safety. As such, there is a wider scope for future deployment arrangements and appliance positioning.

What we plan to do

The total number of command and control units will be reduced, with the use of conventional vehicle chassis models being preferred and pod based units and trailers being removed from service.

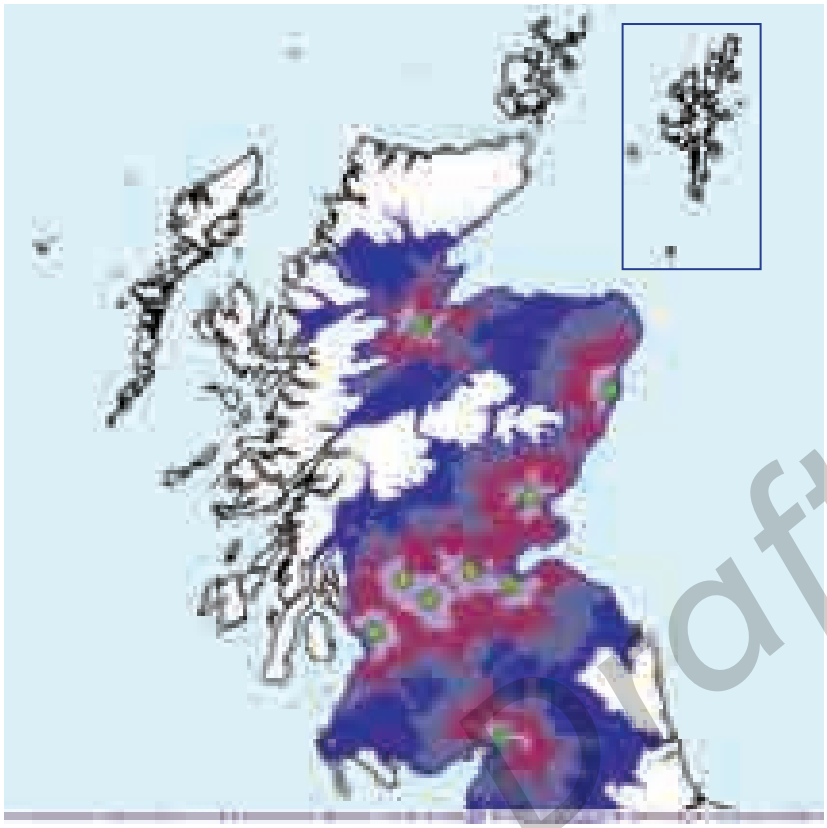
The distribution of command and control vehicles across the Service Delivery Areas will be as follows:

North SDA: Inverness, Altens (Aberdeen) and Blackness Road (Dundee)

West SDA: Annan, Milngavie, Bellshill and Dreghorn

East SDA: Bo'ness and Liberton (Edinburgh)

Due to the comparatively compact geography of East SDA and the readily available support from command units in the North (Dundee) and West (Bellshill), it is deemed sufficient to have 2 command units covering this area.



Key - Travel Time

- *20 minutes*
- *40 minutes*
- *60 minutes*
- *90 minutes*

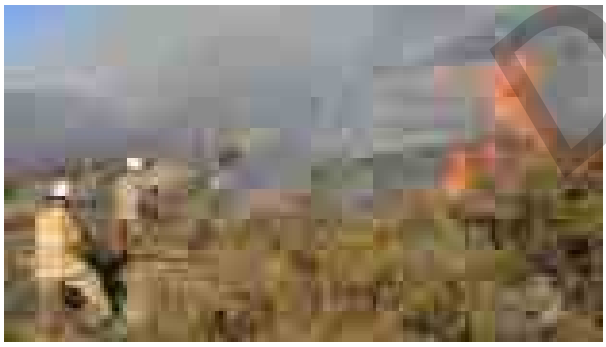
The adjacent diagram shows the coverage that can be achieved with the proposed distribution of command and control vehicles.

COMMAND AND CONTROL
Inverness
Altens (Aberdeen)
Blackness Road (Dundee)
Bo'ness
Liberton (Edinburgh)
Annan
Milngavie
Bellshill
Dreghorn

18. 4 X 4 Vehicles

Severe weather conditions including flooding and heavy snowfall can hamper emergency response in Scotland as has been witnessed in recent years. Although mention is made of this within the scope of the overall review, this final report does not propose to detail a precise deployment plan for these resources. A strategic overview of 4x4 availability will ensure that an appropriate, risk-based distribution of the limited vehicle numbers will be achieved, which will then be managed locally by Service Delivery Areas. This approach will allow vehicles to be moved to areas of greatest need on a short term basis as part of severe weather planning and preparation.

19. Wildfire



Wildfire is a generic term used to describe incidents that cover a large area and that may involve any or all of the major vegetation types found in Scotland i.e. moorland, heather, gorse, grass, forestry, farmland and natural woodland.

Wildfire was initially considered as part of the special resources project. However the way in which wildfire resources are distributed, stored, crewed and operated is entirely different to the other key special resources incorporated within the project, and for this reason it was decided that Wildfire resources would form part of a separate policy and procedure regarding the general approach by the SFRS to such incidents. The Fire and Rescue Wildfire Operational Guidance document was issued in 2013, having been commissioned by Scottish Government, and a new project has been initiated in the North SDA to look at the future SFRS approach to wildfire incidents. The Scottish Wildfire Forum (SWFF) will be looking into all aspects of wildfire management in order to raise awareness, encourage public responsibility, improve firefighter safety and reduce the demand on SFRS resources during wildfire season.

20. Incident Logistical Support

Large or protracted incidents require additional logistical support to be brought onto the incident ground to allow operations to be maintained over an extended period. Such support can involve welfare provision for crews including food, water, shelter and toilet facilities. In terms of the maintenance of firefighting operations, BA set servicing facilities and spare BA cylinder packs are required, along with enhanced command and control provision.

For large incidents, these resources will be supplied by our prime mover stations in Elgin, Perth, Renfrew and Dunfermline through delivery of an incident support pod and/or a welfare pod as required. Additional support can be provided through the provision of a Command and Control vehicle or through the attendance of a Salvation Army catering vehicle. However, there may be times where the attendance of such resources cannot be justified due to the limited scale of the incident, or where these resources are stretched as a result of simultaneous incidents.

To ensure the availability of basic logistical support, all SFRS Mass Decontamination vehicles and Urban Search and Rescue vehicles will have a logistical support 'cage' provided on them. This cage will contain spare BA cylinders, BA servicing packs, food and water to ensure that basic support can be provided to maintain operations and allow crew welfare considerations to be met.

21. Delivery timescale

Complete implementation of the recommendations contained within this report will potentially take up to 3 years, and is dependent on a number of factors; notably including capital funding planning to improve and standardise the emergency vehicle fleet, and the delivery of the extensive training programme necessary to fully declare the desired competencies in the wide range of specialist attributes concerned.

Having said that however, it is important to commence implementation immediately in order to realise the desired benefits; of improving safety, improving services and improving efficiency. Some elements of the plans can be achieved relatively quickly, within a matter of weeks. These include altering the water rescue storage and deployment configurations at Elgin and Newton Stewart; and the redeployment of command and control vehicles.

Some areas will take a little longer, for example the redeployment of high reach appliances or prime movers with their associated pods will require alterations to stations for storage and charging systems, in addition to the training requirements. Understandably, the introduction of new line and water rescue teams will take the longest, due to the extensive and complex training requirements for these disciplines.

In addition to these requirements, some personnel issues are likely to arise which may affect the availability of suitable staff at each designated station. These are not anticipated to be insurmountable but need to be factored into the overall delivery timescale. Specific arrangements for crewing specialist vehicles are outwith the scope of this report and are being addressed within other work packages.

Detailed implementation plans will be produced for each Service Delivery Area. These plans will be routinely available for scrutiny through the Service Transformation programme.

22. Engagement and Consultation

Engagement and consultation have been ongoing throughout this review process. Officers and colleagues from all legacy services were involved in compiling individual reports on each aspect of specialist rescue, identifying the existing picture and the recommendations for future delivery. Representatives from the Fire Brigades' Union and Fire Officers Association have been fully engaged with during compilation of this final report.

Discussions have also taken place with Scottish Government colleagues who showed a keen interest in all areas of this report, but specifically wanted reassurances around National Resilience assets (Urban Search and Rescue, Mass Decontamination, High Volume Pumps and Detection, Identification and Monitoring vehicles).

The draft final report was circulated amongst all relevant partner agencies, including Police Scotland, Scottish Ambulance Service, Maritime Coastguard Agency, Ministry of Defence, Convention of Scottish Local Authorities, Regional Resilience Partnerships, Business Engagement Forum and Her Majesty's Chief Inspector of Fire (Scotland). Views and responses have been considered and acted upon where appropriate.

Whilst local effects have been considered throughout this process, it has always been the main focus to concentrate on the overall strategic impact of these recommendations. Specialist resources by their very nature are limited in number and availability, and have to be deployed in a manner which fits the overall risk profile within Scotland. Historical arrangements within legacy services must be recognised as such, with the creation of the SFRS bringing an opportunity to develop a more appropriate and risk-based approach which will result in the most favourable footprint of these valuable resources across the communities of Scotland.

Appendix 1 - Table of stations with special resources

Proposed end state

Multi (Wholetime) Pump Station	Special Resource			
Clydebank	USAR	High Reach		
Motherwell	Water Rescue	High Reach		
Coatbridge	High Reach	Mass Decon		
Cumbernauld	USAR			
Hamilton	Hazmat			
East Kilbride	Line Rescue			
Clydesmill (Cambuslang)	Water Rescue	High Reach	High Volume Pump	
Kilmarnock	USAR	High Reach		
Ayr	Water Rescue	High Reach		
Paisley	High Reach			
Greenock	High Reach	MIRG		
GLASGOW				
Maryhill	Mass Decon	High Reach		
Knightswood	Water Rescue			
Easterhouse	Heavy Rescue			
Springburn	Mass Decon	High Reach		
Polmadie	Water Rescue	High Reach		
Dumfries	Water Rescue	High Reach	Heavy Rescue	
ABERDEEN				
N.Anderson Drive	USAR	High Reach	DIM	
Central	Water Rescue	Mass Decon	High Reach	
Altens	Line Rescue	Command and Control		
Inverness	Water Rescue	High Reach	Heavy Rescue	Command and Control
DUNDEE				
Blackness Road	Mass Decon	High Reach		Command and Control
MacAlpine Road	USAR	High Reach		
Kingsway East	Water Rescue			
Perth	Water Rescue	High Reach	Prime Mover	
Stirling	Water Rescue	Heavy Rescue Unit		
EDINBURGH				
McDonald Road	High Reach	DIM		
Tollcross	Line Rescue	High Reach		
Sighthill	Heavy Rescue	High Reach		
Crewe Toll	Mass Decon	High Reach		
Dunfermline	Mass Decon	High Reach	Prime Mover	
Glenrothes	Water Rescue			
Lochgelly	Line Rescue			
Kirkcaldy	High Reach			

Appendix 1 continued

Single (Wholetime) Pump Station	Special Resource		
Oban	Water Rescue	High Reach	
Milngavie	Command and Control		
Bellshill	Command and Control		
Johnstone	High Reach		
Renfrew	Prime Mover		
Dreghorn	Command and Control		
Balmossie	DIM		
Elgin	Water Rescue	High Volume Pump	Prime Mover
Livingston	High Reach		
Bo'ness	Command and Control		
Falkirk	High Reach	High Volume Pump	
EDINBURGH			
Liberton	Command and Control		
Newcraighall	USAR		
Marionville	Water Rescue		
Dalkeith	USAR		
Galashiels	Water Rescue		
*Hawick	Water Rescue		
Bathgate	Water Rescue		
Bishopbriggs	DIM		
Alloa	High Volume Pump		

RDS Station	Special Resource
Fort William	Water Rescue
Newton Stewart	Water Rescue
Annan	Command and Control
Forfar	Hazmat
Kilsyth	Hazmat

* Water Rescue resource for the Scottish Borders area. Exact location to be confirmed.