



DESURBS Draft Deliverable 2.1 (d2.1c): Roles of Key Stakeholders

Project full title: 'Designing Safer Urban Spaces'

Grant agreement no.: 261652

Lead beneficiary for Deliverable 2.1: Loughborough University

Dissemination level: Public (for final Deliverable 2.1)

Interim expected delivery date: Month 30

Authors: Ksenia Chmutina, Lee Boshier (Loughborough), with Tamar Ganor, Dalit Pinsly-Shach and Mike Turner (Bezalel)

Interim actual delivery date: Month 30

Executive Summary

This report constitutes Deliverable 2.1 of the FP7 Security Program research project 'Designing Safer Urban Spaces' (DESURBS, Grant Agreement no. 261652). This report on Work Package (WP) 2 of the DESURBS project is chronologically the first deliverable of this work package. The purpose of the deliverable is to report on the identification of public and private sector stakeholders responsible for the management of security risks, as well as understanding of their roles and interconnectivities.

Understanding in regard to the case study city of Nottingham is significant, and has enabled the initial creation and development of the ISR framework for WPs 2.3 and 2.4, the structure for which has been incorporated into this deliverable and that for WP 2.2. A field trip to Jerusalem in January 2012 has led to a significant increase in understanding regarding the case study city, and has formed a base from which further data collection will be undertaken. In addition to that, interviews conducted by Partner 8 provided significant insight into the roles of the stakeholders and allowed comparison with the UK (Nottingham) data.

Acknowledgements

We acknowledge the work of all the partners involved in the DESURBS project, as their own work, thoughts and perspectives have informed, and will continue to inform, the work that the DESURBS partners at Loughborough University do.

We acknowledge the time, effort and knowledge of all those who have been engaged with and interviewed; without the considerable data collection that has taken place, the significance, rigour and value of WP 2 and others' work would not be in line with the aim and objectives of the project.

We acknowledge the work and continuing influence of Dr Julie Fisher and Dr Steve Harre-Young, who worked on the DESURBS project for Loughborough University during the first two years of the project.

Table of Contents

Executive Summary..... 1

Acknowledgements..... 2

Table of Contents..... 3

1. Introduction..... 4

 1.1 Purpose of the report..... 4

 1.2 Structure of the report..... 4

2. Methodology..... 5

3. ISR Case Study Context..... 6

 3.1 Overview of the legislative context..... 7

 3.2 Identify, characterize, and assess hazards/threats..... 8

 3.3 Assess the vulnerability of urban spaces to specific hazards/threats..... 14

 3.4 Determine the risk..... 18

4. Stakeholders Roles and Perceptions..... 25

 4.1 Nottingham/ UK..... 25

 4.2 Jerusalem/Israel..... 31

 4.3 Comparison of key stakeholders’ role..... 35

5. Conclusion..... 37

6. References..... 38

Appendix 1. Key informant interviews..... 41

Appendix 2. Jerusalem street development planning scheme..... 42

Appendix 3. Emergency response and recovery in the UK..... 45

Appendix 4. Jerusalem stakeholders’ interviews (data sample)..... 58

Appendix 5. Multi-agency cooperation for urban resilience in Nottingham and Nottinghamshire.. 61

1. Introduction

This report constitutes Deliverable 2.1 of the FP7 Security Program research project 'Designing Safer Urban Spaces' (DESURBS, Grant Agreement no. 261652). The geographic focus of DESURBS is international, but with specific attention to two case study city locations: Nottingham (UK) and Jerusalem (Israel). This report on Work Package (WP) 2 of the DESURBS project, which draws on these two case study cities (and countries), is chronologically the first deliverable of this work package. WP2 encompasses the development of an integrated security and resilience (ISR) design framework (discussed in deliverable 2.3), specifically for identifying urban vulnerabilities and improving urban spaces with respect to security threats. ISR is informed by:

- identifying the public and private sector stakeholders responsible for the management of security risks and understanding their roles and interconnectivities (WP 2.1)
- assessing security and resilience approaches suitable for urban spaces (WP 2.2)
- consolidating security and resilience approaches suitable for urban spaces (WP's 2.3 and 2.4)

This report should be read in conjunction with a report on multi-agency co-operation in Nottingham (see Appendix 5); significant work has been carried out on the Nottingham case study, and it now forms a working paper that can be accessed at the following address:

[http://www-staff.lboro.ac.uk/~cvlb/documents/DESURBS_WP2.1\(2011\).pdf](http://www-staff.lboro.ac.uk/~cvlb/documents/DESURBS_WP2.1(2011).pdf)

1.1 Purpose of the report

The purpose of this report, in line with the above, is to report in relation to WP 2.1 and the identification of public and private sector stakeholders responsible for the management of security risks, as well as understanding of their roles and interconnectivities.

1.2 Structure of the report

In order to provide consistency across all WP2 outputs, a standard structure has been incorporated that reflects the creation and development of the ISR framework (d.2.3), as this provides a logical process through which designing safer urban spaces can be achieved, and therefore provides an ideal format upon which to base the work undertaken to-date. Independent to the structure of the ISR framework and sections on work undertaken in regard to each case study city, Section 2 of this report outlines methodology adopted within this research, and provides details of the data collection. Sections 3 and 4 present the work undertaken in relation to the case study cities of Nottingham and Jerusalem: section 3 discusses ISR stages taking into account the data provided by the Nottingham and Jerusalem case studies. Sub-sections present work in relation to legislative context and Stages 1 to 3 of ISR. Section 4 discusses the initial comparison of the key stakeholders roles and perceptions in the above-mentioned case studies. Section 5 presents the conclusion of this report, Section 6 presents the references for publications cited in this report, and the appendices cited within the report are presented at the end of this report.

2. Methodology

This report was created through undertaking an extensive literature review, as well as the data collection in the case study cities of Nottingham and Jerusalem. In regard to the review of literature, several databases were interrogated using keyword searches in MetaLib, which included the Construction Information Service (CIS), Web of Science, ICE Virtual Library, and Health and Safety Science Abstracts. References of key publications were also examined in order to provide up to date and appropriate material. The literature identified was of international origin, yet in regard to work on Nottingham, UK-based publications and sources were predominantly used. Material that was more than 10 years old was generally avoided, as there have been rapid developments on this topic in recent years. Searches for literature were undertaken in accordance with the themes and structure of the ISR framework, and roles and responsibilities of identified stakeholders.

The literature review was supplemented by a number of key informant interviews with public and private sector stakeholders in Nottingham and Jerusalem (Appendix 1). Recorded interviews were transcribed, and the data was organised according to the structure outlined above. During a field trip to Jerusalem in January 2012, a number of meetings and presentations by local stakeholders (and stakeholder groups) were participated in, observed and noted. Partner 8 conducted interviews with Israeli stakeholders, however the interview questions were informed by the planning phases supplied by WP2, and the spreadsheets were translated to Hebrew and adapted to the Israeli planning system and procedures. Although the planning processes in Israel and UK evolved from similar concepts of the mid-twentieth century, the two case studies provide different contexts whereby the more centralized and hierarchal processes in Jerusalem have similarity to some European countries, while the current laissez-faire in the UK represents a more liberal approach that is evolving in others. This has provided a wider platform for evaluation of the findings. The stakeholders identified for the Jerusalem case study include those involved in the planning scheme (Appendix 2) developed by the Jerusalem municipality, as well as the 'City engineer forum', those related to the district administration and district planners, and the police. All data collection in each case study city has been co-ordinated by researchers at Loughborough University in accordance with UK, Israeli, and European Commission data collection and data protection rules and regulations.

3. ISR case study context

This section of the report provides the background information on the legislative context in the case study cities and addresses the stages of the ISR based on the information provided by the Nottingham and Jerusalem case studies analysis.

ISR includes the following stages:

1. Identify, characterise and assess hazards/ threats
2. Assess the vulnerability of urban spaces to specific hazards/ threats
3. Determine the risk
4. Identify ways to reduce those risks
5. Prioritise risk reduction measures

This deliverable covers Stage 1 to Stage 3 only, as these are the most relevant to the context of stakeholders' involvement. These stages will mainly be discussed with regards to the UK contexts; however relevant information on the case study cities (Nottingham and Jerusalem) will also be presented. Deliverable 2.3 provides further details on each of the ISR stages. In addition, Appendix 3 presents an example of the emergency response and recovery in the UK, which incorporate all stages of the ISR. It covers both regional and local responses to natural hazards and malicious threats, as well as explores specific responses to DESURBS thematic areas.

3.1 Overview of the legislative context

The UK has a relatively well-established formal system for emergency planning that was prompted by the Civil Contingencies Act (CCA) (Civil Contingencies Secretariat, 2004), which provides the framework for civil protection in the UK. Prior to this, civil protection legislation dated back to 1948 with the notion of 'hostile attack' from a foreign power. Emergency legislation dates back even further to the 1920s. A review of emergency planning took place in response to two major incidents in the UK in 2000, namely, the fuel protests and several instances of severe flooding. This review confirmed that new legislative measures were needed to ensure that there was an adequate framework for civil protection, resulting in the CCA 2004. The CCA 2004 has two parts: (Part 1) local arrangements for civil protection (protecting citizens from military attack), and (Part 2) emergency powers. Key to the act is an updated definition of the concept of 'emergency', which now covers threats from international terrorism and threats to the environment, such as contamination of land following a biological or chemical terrorist attack, and the loss of communication systems. The act focuses on three types of threat:

'An event or situation which threatens serious damage to human welfare; an event or situation which threatens serious damage to the environment; or war, or terrorism, which threatens serious damage to security' (Civil Contingencies Secretariat, 2004, p.2)

In response to the hazards and risks identified, a number of 'National Security Tasks' have been developed (HM Government, 2010a: 33). These relate to risk identification, strengthening legislation, and resolution of overseas conflicts and instability. The final two are most relevant to DESURBS as they focus on the importance of resilience and working together in a 'whole-of-government

approach' (HM Government, 2010a: 33). The Strategic Defence and Security review (HM Government, 2010b) outlines the National Security Tasks and planning guidelines. These are to:

- identify and monitor national security risks and opportunities;
- tackle at root the causes of instability;
- exert influence to exploit opportunities and manage risks;
- enforce domestic law and strengthen international norms to help tackle those who threaten the UK and our interests, including maintenance of underpinning technical expertise in key areas;
- protect the UK and our interests at home, at our border and internationally, to address physical and electronic threats from state and non-state sources;
- help resolve conflicts and contribute to stability;
- provide resilience for the UK by being prepared for all kinds of emergencies, able to recover from shocks and to maintain essential services; and
- work in alliances and partnerships wherever possible to generate stronger responses.

This highlights a coordinated approach and strategic intelligence at several levels, e.g. there are key roles for the Diplomatic Service, the Foreign and Commonwealth Office and the international development programme, more collective international security and military capability, and an effective and well organised local response.

In contrast to Nottingham (and the UK), there are no legislated requirements to incorporate security and resilience into urban spaces in Jerusalem (Pedahzur & Paran, 2003). However, there is legislation to incorporate a protected space inside buildings to defend them from the effects of warfare (Knesset, 1965), up-to-date earthquake regulations for all new buildings and a national plan for upgrading existing buildings. Legislative and regulation bodies in Israel have not identified risk mitigation as a needed inherent phase of planning and building. The only risk types which are formally surveyed as part of the planning and building process are environmental hazards, which might be considered in the preparation of an Environmental Impact Assessment when required. Whilst no formal arrangements are in place to co-ordinate all stakeholders involved in emergency planning and preparedness within the Planning and Building Law, such as that which resulted from the CCA in the UK, a similar network of relationships between various stakeholders has been partially established in general guidelines; however it has not been executed properly during real time events and not been practised thoroughly. The relevant governmental report (State Comptroller and Ombudsman, 2010) highlighted these deficiencies, and much is being done to rectify this by the Civil Defence Authorities and the highly professional Army Search and Rescue Unit.

3.2 Identify, characterize, and assess hazards/threats

This is the first stage of ISR, which includes the process of finding, recognising and describing hazards/ threats to which the space is exposed. This section presents the types of risks relevant to DESURBS themes and then discusses them using the examples of the case study cities.

Flooding

This is arguably one of the greatest natural hazards in the UK and also to Nottingham that poses direct threats to urban areas. Three main types of flooding are 'from the sea (coastal or tidal), from

rivers and streams, and from surface water (caused by excess rainfall before it enters the drainage system)' (Cabinet Office, 2010a: 11). Approximately 10,000 km² (or 8% of the total area) of land in England is at risk from fluvial (river) flooding, including tidal rivers and estuaries (DTLR, 2001). An estimated five million people, two million homes and 185,000 businesses are at risk from flooding in England and Wales every year, with total exposed property, land and assets amounting to £214bn (Crichton, 2005). Coastal flooding occurred in January 1953, when flood defences were breached in several coastal towns on the east coast of England. Inland flooding refers to river and surface water floods, e.g. due to reservoir dam failure. This type of flooding is increasing, with recent significant incidents in 2000, 2007, and 2009. The risk of flooding in the UK can be increased to a certain extent due to changes in river hydrology caused by human activity and partly from the increase of development in areas at risk. It is expected that climate change will increase the risk of coastal and river flooding as a result of sea-level rise and more intense rainfall events. The 'Foresight Report' (Office of Science and Technology, 2004) suggested that annual average damages could increase from £1bn to between £2bn and £21bn if no action is taken to manage the increased risk. This is a particular concern because there are already 'over 2,000 schools and 80 hospitals in flood hazard areas in England' (Crichton, 2008, p.125). It should also be noted that pluvial flooding (typically associated with abundant rainfall in a localised area, and exacerbated by insufficient capacity of urban drainage systems) has also increased in prominence on the flood risk agenda in light of the Summer 2007 floods (Bosher *et al.*, 2009). For instance the flooding that inundated the coastal city of Hull affected 8,600 homes and 1,300 businesses and has now largely been attributed to the city's drainage network being totally overwhelmed by heavy and prolonged rain (Coulthard *et al.*, 2007).

Terrorism

Again, the following structure according to which the risk of a variety of manmade and malicious threats is presented is mainly drawn from the National Risk Register (Cabinet Office, 2010a), as it offers a clear and comprehensive means of organizing these; with the threat for terrorism considered to be a high profile threat in the UK. The terrorist threat has risen on the political agenda, since it is targeted on '*crowded places, and the infrastructure and buildings that are integral to societal well-being*' (Harre-Young *et al.*, 2010). Clarke and Soria (2009) state that there have been 16 cases of terrorism in the UK since 2001, and another two that were disrupted; of these, seven targeted crowded places and six were aimed at transport networks. The Joint Terrorism Analysis Centre (JTAC) is responsible for setting the threat level from international terrorism in the UK. Information about the current threat level is always available through the Home Office, the Security Service and the UK Intelligence Community websites. The levels are:

- Critical – an attack is expected imminently;
- Severe – attack highly likely;
- Substantial – strong possibility;
- Moderate – possible but not likely; and
- Low – unlikely.

Three associated response levels are 'exceptional' (for critical levels), 'heightened' (for severe and substantial levels), and 'normal' (for moderate and low levels). 'Normal' response level involve baseline protective security measures; 'heightened' requires additional and sustainable protective security measures reflecting the broad nature of the threat; and 'exceptional' response entails

maximum protective security measures to meet specific threats (NaCTSO, 2006). Terrorism is a Tier One risk in the National Security Risk Assessment, and is seen to come from the Al Qaeda senior leadership (HM Government, 2010b). At the time of writing, this threat is categorised as 'severe'. Residual terrorism linked to Northern Ireland is an increasing concern. Terrorist attack can take many forms, from the use of CBRN substances, to person and/or vehicle borne improvised explosive devices being used on transport, infrastructure and communication systems. This section uses the structure offered by the NRR, focusing on crowded places, infrastructure, transport and communications. A range of terrorist attacks have taken place around the world, indiscriminately targeting areas where large numbers of people are congregated, resulting in high casualty numbers. Examples from the UK include the Omagh car bombing in Northern Ireland carried out by the Real IRA in 1998 when 29 people were killed and 220 injured. In 2007, Islamist extremists carried out an attack on Glasgow International Airport, injuring five members of the public. A terrorist attack on infrastructure has the potential for similar impacts that result from severe weather, industrial accidents and technical failure. In the UK, attacks have been made on electricity substations in the 1990s and London's Docklands in 1996, with major disruption to services as a consequence. The possibility of CBRN attack is remote but still has to be taken into account. Most CBRN-related activity across the world to date has been either criminal or involved hoaxes or false alarms.¹ The Cabinet Office (2010a) outlines their potential:

- Chemicals can be combined with explosives to increase their impact and may be used as small-scale (assassination or poisonings) or large-scale (mass-casualty) weapons.
- Naturally occurring bacteria can be cultured for use in an attack. This could take the form of food or water poisoning or the spread of infectious diseases.
- Radiological material could also be combined with explosives to produce a radiological dispersal device (RDD).
- Nuclear or fissile material may be used to develop a nuclear weapon.

Often referred to as 'cyber attacks' (Cabinet Office, 2010a), these can result in either information being exported, modified or deleted, or communication systems failure. These however are not discussed in the report as it is unlikely that any urban design interventions would be useful in mitigating this type of attack.

Pandemic influenza

Although this risk (and those similar to it) are not likely to pose direct threats to urban spaces, it is possible that the implications of these threats on the design (and potential quarantine of some urban spaces, particularly related to healthcare facilities) of urban spaces could turn out to be an important consideration in the future. Pandemic influenza has similar symptoms to seasonal influenza, but is much more severe and threatens global human health due to its potentially rapid spread. Three global incidences of pandemic influenza have occurred in the last century: Spanish flu in 1918-1919; Asian flu in 1957; and Hong Kong flu in 1968. Pandemic influenza includes the H1N1 (Swine Flu) virus, which occurred in 2009, although this did not have the reach and effect in the UK that was anticipated. More than 30 new or newly recognised infections have been identified around the world over the past 25 years (Cabinet Office, 2010a). Most of these are zoonotic – i.e. they are

¹ <http://www.nactso.gov.uk/AreaOfRisks/Hazardous.aspx>

naturally transmissible between vertebrate animals and humans. Examples are the Lujo virus, which originated in Zambia in 2008, and SARS (Severe Acute Respiratory Syndrome), which emerged in Asia in 2002.

Severe weather

Types of nationally occurring severe weather include storms and gales, low temperatures and heavy snow, heatwaves and drought (Cabinet Office 2010a). Fog is seen to be a local problem, which is outlined in Community Risk Registers. It is possible that the storms and gales mentioned in this section will have implications for how buildings and the spaces between buildings will need to be designed/re-designed; while the extreme temperatures may affect the ways the buildings are designed as well as how people may use urban spaces in the future. Significant storms and gales occur intermittently, with notable incidents in 1987, 1990 and 2007. The damage and death toll of these incidents varies with the time of day, the wind speed and the terrain affected (Cabinet Office 2010a). In January 2007 the huge Europe-wide storm 'Kyrill' affected the UK and cost the UK insurance sector £350m. 'Kyrill' killed 11 people in England, caused widespread damage to buildings, infrastructure and transportation networks and was a clear message that storms in the UK and Europe need to be taken very seriously. The implications of increases in the magnitude and frequency of extreme storms across Europe means that structural engineers (amongst other disciplines) may need to review resilient construction and design requirements (such as increasing the strength of roof and cladding fixings during new build or roof replacement).

Heat waves

Although temperatures of 32°C or more are reached infrequently in the UK, there have been incidences in 1911, 1976, 1990, 2003 and 2006. The impact of these can be serious, with an estimated 2045 deaths occurring due to the heat in 2003. Other consequences of heat waves include cases of sunburn, heat exhaustion and respiratory problems, increased car breakdowns and traffic problems due to road surface issues (Cabinet Office 2010a).

Major industrial accidents

Although measures have been taken by the government, devolved administrations, industry, regulators and emergency services to prevent major industrial incidents from occurring, they can still happen. There can be a range of impacts, depending on the nature of the industry and the scale of the incident, and these include fires, explosions, contamination and technical failure (Cabinet Office 2010a); these types of events can be particularly disruptive if they affect critical infrastructure. Critical infrastructure is defined by the Centre for Protection of National Infrastructure (CPNI) as 'specific assets which, if destroyed or seriously disrupted, would cause major disruption to the service being provided' (ICE, 2009, p.5). Key components of critical infrastructure typically include (a) information and communications networks; b) government services; c) banking and finance; d) water supply/treatment; e) energy production and storage; f) transport networks; g) emergency services; and h) public health services. If major infrastructure fails, there is the potential for serious damage to the environment, the economy and loss of life (ICE, 2009). It has been suggested that one of the greatest threats to the resilience of infrastructure is a lack of maintenance (ICE, p.2009). Although the DESURBS project is not focused upon critical infrastructure it is important to acknowledge that

failures in this types of 'essential lifelines' would pose large problems for most urban spaces; it is also pertinent to note that many key components of critical infrastructure are located in (or at least interface with) public urban spaces.

Major transport incidents

This relates to air, maritime, and road and rail transport incidents that require a central government response. Thankfully, transport incidents on this scale occur very infrequently but when they do they can cause large scale disruption to urban spaces. Notable incidents have been:

- The Boeing 737 crash close to the M1 Motorway in 1989 - 47 passengers killed
- The capsizing of the Herald of Free Enterprise in 1987 - 187 deaths
- Ladbroke Grove rail crash, London 1999 - 31 killed, about 400 injured.

3.2.1 Nottingham case study

The examples of two types of risks relevant to the Nottingham case study are presented in this section.

Associations with crime

Between 2000 and 2003 the press and other media claimed Nottingham was the 'gun-crime capital of the UK', and was dubbed "Shottingham" in some areas (Alderson and Copping 2007; Doward 2007). In 2005, it had one of the highest crime rates in the country, with 115.5 crimes per 1000 people but by 2007 the BBC reported that the number of shootings in the city had fallen from 51 (in 2003) to 13 (in 2006).² However, in January 2008 it was reported that gun crime in the city had risen for a second consecutive year, with a 50% increase in gun crime during 2007.³ The incidence rate of many crimes in Nottingham is several times higher than the English average.⁴ A crime survey by Reform (Gibbs and Haldenby 2006:5) stated that Nottingham topped the crime rankings for police statistics on murders, burglaries, and vehicle crime, and "had almost five times the level of crime as the safest town in the rankings". While the crime figures in the city are relatively high for the UK, initiatives introduced to tackle the levels of crime appear to be having an effect, with a 2006 Home Office survey showing that the overall level of crime in the city was down by 12% since 2003 (Nottingham City Council 2006). Initiatives include the Community and Neighbourhood Protection Service developed by Nottingham City Council, Nottinghamshire Police and Nottingham City Homes to take an uncompromising stance towards anti-social behaviour. It comprises Community Protection Officers (CPOs), Police Officers, Police Community Support Officers (PCSOs) and Anti-Social Behaviour Officers who work with internal and external agencies to reduce anti-social behaviour and the fear of crime.

Associations with flooding

Nottingham has a history of flooding dating back to 1795. The current defences were built after serious flooding in 1947 affected 28 miles of road, 3000 properties and 86 factories in the city centre.

² <http://news.bbc.co.uk/1/hi/england/nottinghamshire/6472687.stm>

³ <http://news.bbc.co.uk/1/hi/england/nottinghamshire/7170441.stm>

⁴ <http://www.upmystreet.com/local/police-crime/1/Nottingham.html>

After further significant flood events in 1998 and 2000 the UK Government's Environment Agency worked with partner organisations to study the flood risk over the entire length of the River Trent and its main tributaries (Nottingham and Nottinghamshire Local Resilience Forum, 2011). The findings were published in the Fluvial Trent Strategy (Environment Agency, 2005), which showed that the existing defences offered a relatively low standard of protection compared with the latest best practice recommendations. Based on this work the Environment Agency prepared and started work to reduce food risk by building the Nottingham Left Bank flood alleviation scheme. The £51 million flood alleviation scheme aims to reduce the risk of flooding to 16,000 homes and businesses along a 27 kilometre stretch of the River Trent, from Sawley to Colwick (Figure 1).

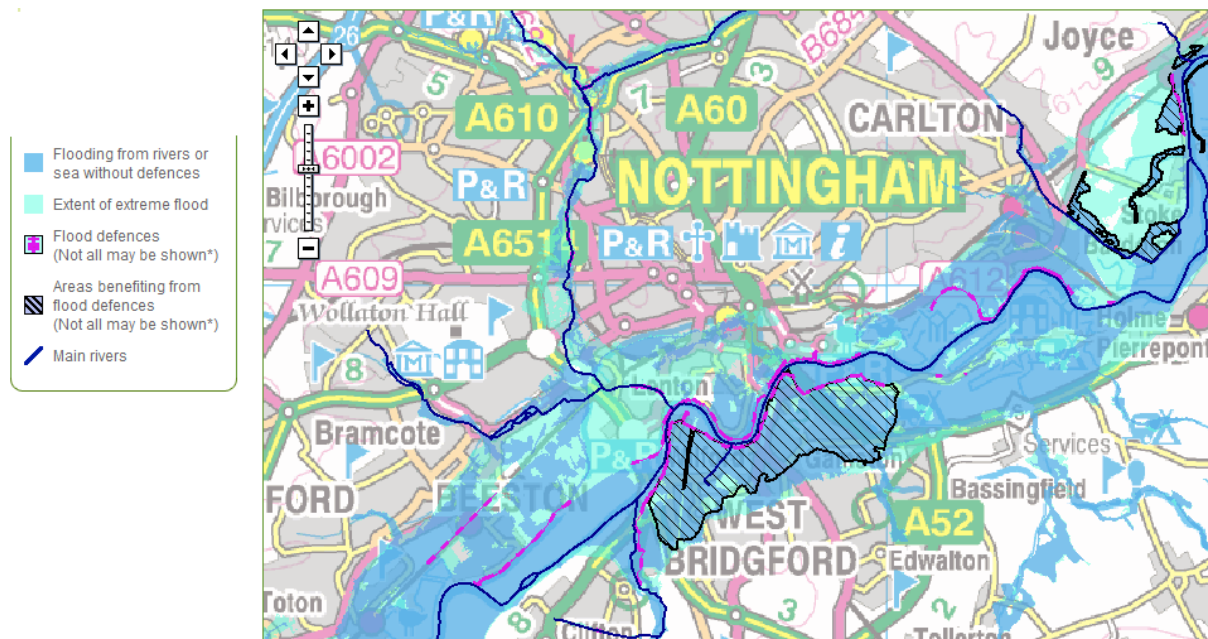


Figure 1 Flood map of Nottingham (Source: Environmental Agency, 2013)

It will also provide additional protection to key infrastructure at the heart of the communities along this stretch of the Trent. Currently the probability of flooding across Nottingham is about two per cent (1 in 50 chance) in any given year. Once the new works are complete this risk will be reduced to one per cent (1 in 100 chance).

3.2.2 Jerusalem case study

Not only in Israel but also worldwide, Jerusalem has a unique status, which makes it a target to man-made threats. Its religious and political importance have enhanced vulnerabilities in the urban area especially in land mark perimeters, which include conservation monuments such as the Temple Mount/Haram e-Sharif, Church of the Holy Sepulchre and the Western Wall on one hand and government buildings such as the Prime Minister's official residence and the House of Parliament - the Knesset on the other. These high profile sites have been used numerous times as spaces for public activity such as rallies and demonstration as well as targets for terrorist attacks (Figure 2). Since the governance sites are well protected (Pedahzur and Paran, 2003), terrorist attacks have often struck Jerusalem in many public areas and transport nodes, which are easy to access and host a large volume of people (Savitch, 2005).

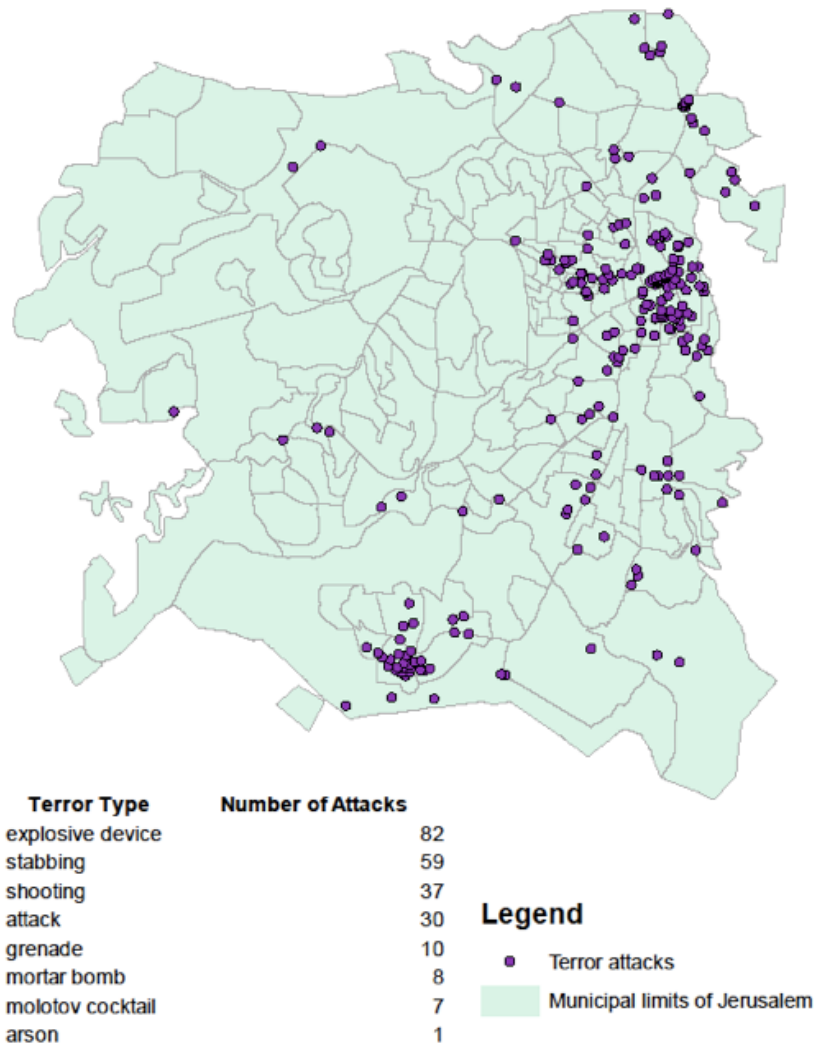


Figure 2 The map of terrorist attacks in Jerusalem in 1990 - 2002 (Source: Produced by Tamar Ganor, Bezalel team based on Hebrew University of Jerusalem's data)

In terms of natural hazards, Jerusalem is prone to earthquakes. Most of the city was built before 1980, a year when earthquake standards were incorporated into building regulations. In addition, many of the buildings that can potentially be damaged by the earthquakes are closely built and based on older strata and landfills, especially the Old City thus enhancing instability. Some of these areas include national and international heritage sites, and improving their resilience involves many aspects in addition to design, planning and building issues (Israeli Science and Technology National Committee, 2011).

3.3 Assess the vulnerability of urban spaces to specific hazards/threats

This is the second stage of the ISR and it includes the process of assessing the susceptibility of the intrinsic properties to a hazard/ threat. The three DESURBS thematic areas face particular issues in relations to the risks presented in section 3.2.

Transport and transport hubs

Transport systems often involve large crowds of people and are therefore an obvious terrorist target. Rail, bus and underground systems are also open systems in terms of the level of security they can ensure and therefore raise additional risks. In London in 2005, four person-borne improvised explosive devices (PBIEDs) were detonated, three on underground trains, one on a bus, killing 52 passengers and injuring hundreds more. Unsuccessful attacks against the London transport system took place two weeks later. Notable attacks on air transport have also taken place, including in the UK the Lockerbie attack involving a Pan Am flight in 1988. In addition, weather-related risks affect the timely and effective running of transport systems. A recent example in 2010 was the fear of the potential effects of volcanic ash on aircraft engines. This suspended some flights in and out of the UK. Finally, when accidents occur, there is potential for significant casualty numbers, again due to the numbers of people potentially involved.

Shopping centres

'Shopping centres' include out of town retail parks, as well as city and town centre areas and 'high streets' that attract large numbers of people for shopping. Key security issues are those of any crowded place, and include the threat of petty crime and pick pockets, anti-social behaviour and insecure parking (Department for Business, Innovation and Skills, 2010). Fire, floods, severe weather and systems failure can also have adverse effects on the operations of shopping centres. In June 2007, the Meadowhall shopping centre in Sheffield (for details see the devoted case study in the DESURBS Database) was partially closed by flooding, with shoppers and employees trapped on higher levels of the complex, which lost six days' trade as a result.⁵ At another extreme, terrorist threats to shopping centres may be delivered by mail, chemical, biological and radiological incidents, suicide attack, electronic attack, and VBIEDs (vehicle borne improvised explosive devices) (NaCTSO, 2006). In 1996, an IRA bomb was detonated at the Arndale shopping centre in Manchester, injuring 206 people, with insurance costs of £411 million. Recently a large-scale attack on the Bluewater shopping mall in the southeast of England was thwarted by the UK security services.

Sporting venues

Sporting venues can range from recreational 'open spaces'; this typology includes recreation grounds, playing fields, play areas etc. (Welsh Assembly Government, 2009) to specific sports grounds and stadia (football clubs, cricket grounds etc.). Sporting venues are, by definition, places where crowds congregate; therefore all issues relating to risks in crowded spaces are potentially relevant here. Specific incidents in the past 40 years relate to collapsing buildings, fire and crushing:

- In 1971 crush barriers collapsed at the Ibrox football stadium in Glasgow, Scotland as thousands of fans made their way out of the stadium, killing 66
- In 1985, a fire at Bradford City football ground killed 56 and injured 265
- In 1989, 96 football fans were crushed to death against the high, wired-topped safety fences at the Hillsborough Stadium in Sheffield (see devoted case study in Database).

International sport venues also face potential terrorist attack. Cricket is one such example, although significant incidents to date have not taken place in the UK. Advice is available from NaCTSO (2006) on managing counter terrorism measures e.g. threats from received mail, information security, VBIEDs, CBR attacks, suicide attacks, and firearm and weapon attacks.

⁵ http://www.shopping-centre.co.uk/news/fullstory.php/aid/1977/Meadowhall_hit_by_Sheffield_flood.html

3.3.1 Nottingham case study

Whilst no data collection has been undertaken in Nottingham for the DESURBS project in relation to this stage, an extensive study on the use of urban planning and design in mitigating vehicle-borne improvised explosive devices (VBIEDs) has identified what measures exist to carry out such means, what their requirements, performance and consequences are, and what the incentives of their use are (see Harre-Young, 2012). The study (*ibid.*) also identified there a range of factors influence whether such measures are even incorporated; obligations, incentives, perceptions and moments of terrorism, economic influences, local policy, building stock rotation, threat and risk assessments, and stakeholder understanding and engagement all influence this. Harre-Young (*ibid.*) documents that whilst there are no legislated requirements to formally incorporate resiliency (and in particular, counter-terrorism measures), the incorporation of such measures will be done in accordance with the aforementioned factors, in particular the incentives to do so, but also the benefits that each measure has.

Incentives to incorporate such measures revolve around reductions in risk and impacts in relation to loss of life, damage to property and reputation, revenue generation, the development of competitive advantages, the conduciveness of agendas such as pedestrianisation and regeneration, and possible insurance incentives (*ibid.*). Such findings are pertinent to the DESURBS project more broadly, as well as those partners working on WP2, as it provides a growing account of the incentives to incorporate security into urban space and places, and therefore aids in the consideration and use of any outputs arising from the DESURBS project that relate to this. Harre-Young (*ibid.*) presents a theoretical framework to understand the protection of places, and in time this framework will be assessed as to whether it influences WP2 and in particular, the creation of the ISR framework further.

3.3.2 Jerusalem case study

Approaches to urban planning and design, in relation to security, seemed similar to those found in Nottingham and the UK more broadly. A range of measures had been incorporated into urban space in order to exclude or restrict vehicle movement (Figures 3 and 4). In some severe cases, walls have been used to separate communities and thus highlighted the use of measures in large-scale settings, reminiscent of Belfast (Figure 5).

Furthermore, while buildings have their own security protocol based on private responsibility, open urban spaces have been more prone to incidents and the installation of surveillance cameras has only been a panacea for public concern. Also it has been suggested that surveillance cameras do not necessarily prevent crime, they can merely displace criminal activities to other less scrutinised areas (Coaffee, 2009).



Figure 3 Bollards use to restrict vehicular access in Jerusalem



Figure 4 Bollards at the French Hill bus stop area



Figure 5 Separation wall in Jerusalem

Stakeholders and decision makers are required to understand and assess the risks before decisions are made; therefore a comprehensive research (e.g. Gehl, 2010; Office of the Deputy Prime Minister, 2004; Mulholland Research and Consulting, 2003; Lopez and Van Nes, 2007) was conducted to identify the vulnerability of urban features. As the research progressed, several key issues were noted:

- Each stakeholder and end user has different scopes and agendas, which affect the way they assess the urban environment. In addition the urban environment is highly versatile and changes significantly on a daily basis, and even an hourly basis, which means that vulnerability fluctuates based on the hour, the day and the functions. Therefore a flexible method is required so that different approaches can be recognized over a versatile landscape.
- Each threat has different vulnerabilities. For instance, houses on wooden stilts may mitigate flood risks very well, yet supply a poor defense against terror attacks. Therefore a flexible weighting system should be applied in assessing an urban area's vulnerability.
- The literature survey shows diverse urban elements that can assist in assessing different threats; however this is yet to be determined.
- Due to the large numbers of stakeholders' involvement, an easy, comprehensive method, which can produce powerful visual aids is required.

These insights have resulted in the following main requirements of the urban assessment tool: flexibility, versatility, easy to use and highly visual. First the elements that influence diverse aspects of vulnerability in the urban environment were collected and then sorted by themes. For example:

- a) Usage—includes types of building use (commercial, private, residential, office, mixed use, industrial, sports and cultural venues). Each of these usages can be measured at street level or other, and can be weighted differently according to the purpose of the vulnerability map. Every usage will create a raster, which will show how that usage influences the urban vulnerability.

- b) Building typology—refers to the number of buildings, building placement, layout, distance between buildings, building heights. A new building typology will emerge showing in a raster layer how densities of built areas lead to either safer or more vulnerable urban fabrics.
- c) Open areas - During the day, open areas can create a sense of community, thereby providing a strong sense of resilience. However, during the night time open areas may undermine security and “invite” unwanted incidents. Clearly, this varies for different types of open spaces, and therefore a flexible scale of features should be quantified in this part such as pedestrian street, vast greenery, minimal controlled greenery, commercial street, open air tourist attraction, transit corridor and stations.
- d) Integration/Segregation - analyzing the routes by street width and length, distance between junctions, number of intersections, and transportation options, will result in a raster which will show weaknesses or strengths generated by urban routes. This raster will outline segregated or aggregated urban areas. This feature is the raster expression of the space syntax method.

3.4 Determine the risk

The third stage of ISR aims at identifying the level or risk, expressed in terms of the combination of the likelihood and the impact of an incident caused by that hazard/ threat.

In the UK, since 2005, the Government has carried out an assessment of the risks known as the National Risk Assessment (NRA). The National Risk Assessment is intended to capture the range of emergencies that might impact on all or significant parts of the UK (i.e. natural events, major accidents and malicious attacks) (The Cabinet Office, 2010a); this is the basis for the public National Risk Register.

The National Risk Register uses a matrix of the relative likelihood and impact of the various types of risks, discussed in section 3.2, and further described in Deliverable 1.5. The National Risk Register also sets out planning by government, the devolved administrations and emergency responders for natural events, major accidents, and malicious attacks. Figure 8 is adapted from the 2012 National Risk Register (Cabinet Office, 2012); it aims to show the variety of high-consequence risks and indicates the *relative* likelihood and impact of these. For example, there is a relatively high likelihood of cyber-attack on data confidentiality, although the relative impact of this occurring is presented as low. Pandemic human disease has a lesser chance of happening, but its potential relative impact is represented as very high.

Following the election of the coalition government in 2010, a Strategic Defence and Security Review was undertaken. The new National Security Strategy (HM Government, 2010a) is based on this review and aims to mobilise the government behind the protection of the country’s security interests. It outlines an analysis of the strategic global context and an assessment of where the UK is placed within this. The strategy identifies 15 priority risk types, categorised as Tiers One, Two and Three, which indicate their likelihood and impact:

Tier One:

1. Acts of terrorism affecting the UK or its interests
2. Hostile attacks upon UK cyber space

DESURBS Deliverable 2.1: Roles of key stakeholders

3. A major accident or natural hazard (for example, influenza pandemic)
4. An international military crisis between states, drawing in the UK and its allies

Tier Two:

5. Chemical, biological, radiological or nuclear (CBRN) attack
6. Major instability overseas
7. Increased organised crime in the UK
8. Severe disruption to information received, transmitted and collected by satellites

Tier Three:

9. Conventional military attack on the UK
10. Increase in the level of terrorists, criminals and illegal immigrants into the UK
11. Disruption to oil and gas supplies or price instability
12. Major release of radioactive material from a civil nuclear site within the UK
13. Conventional attack on a NATO or EU member
14. Attack on UK overseas territory
15. Disruption to international supplies of resources

This most recent list is organized according to government priorities, with the emphasis being on terrorism and cyber-attack, pandemic influenza-type events, and military conflict.

DESURBS Deliverable 2.1: Roles of key stakeholders

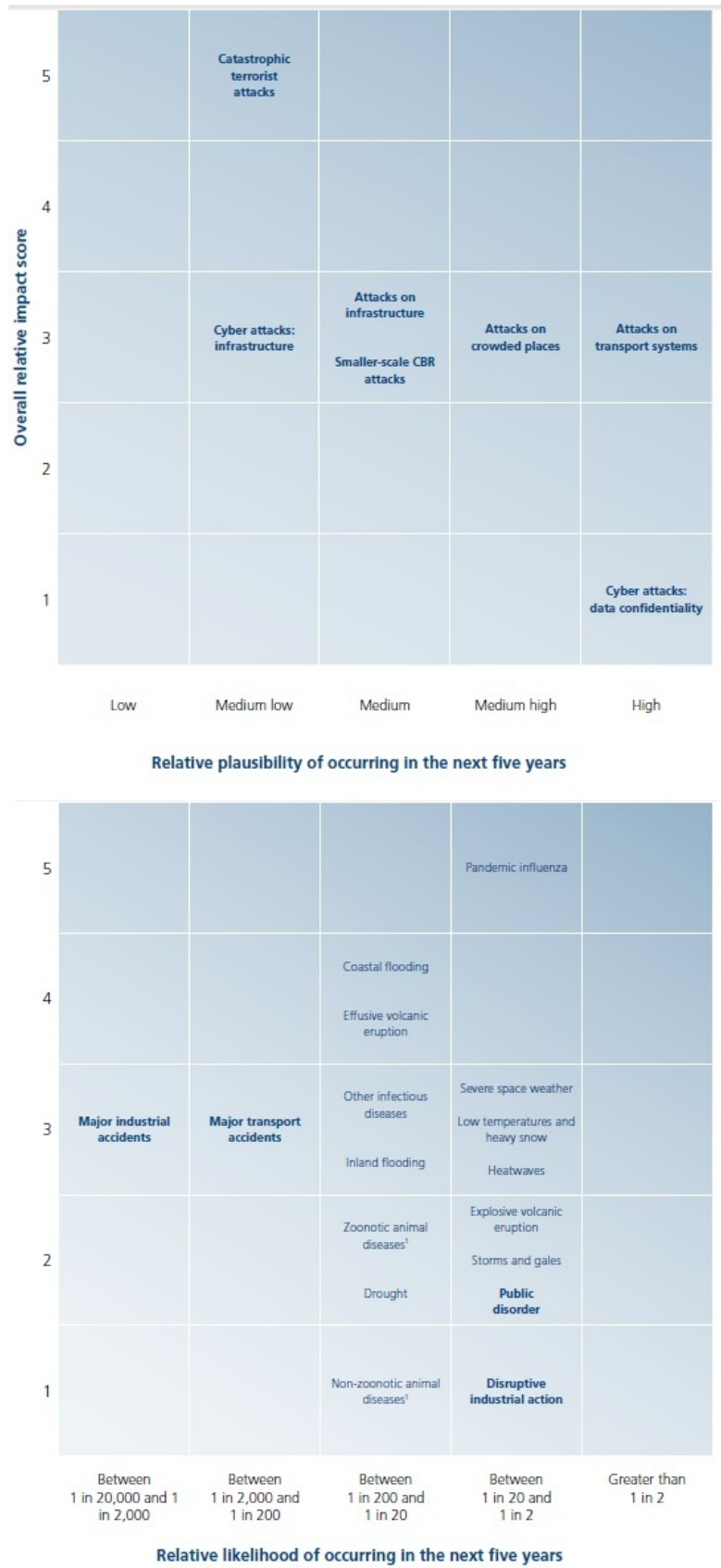


Figure 6 Risk assessments for terrorism and other malicious acts, and natural hazards and major accidents (Cabinet Office, 2012, p.8)

Natural specific risks such as flooding have less priority. These categories are, however, consistent with the current common classification of risks into two main types, i.e. natural hazards and manmade threats (Bosher, 2008).

Box 1: Learning points on the nature of risk

- Global incidents such as pandemic influenza may cause great alarm nationally and locally but do not always have the reach and effect that was anticipated.
- Single natural hazards often have impacts far beyond the initial event. For example, the initial consequences of a storm can be strong winds, lightning, heavy rainfall and hail. However, subsequent consequences might be flooding, land instability and wild fire. It is important to envisage the full potential of any hazard in this way.
- Despite the emphasis at a national level on the terrorist threat, at the local Nottingham level as assessed by the Risk Advisory Group, other concerns are paramount i.e. influenza pandemic and major flooding. Risks assessed locally as high relating to toxic chemical releases, industrial explosions and major fires, technical failure of services such as gas and water, and local road accidents do not map well onto the picture of high consequence risks facing the UK. The national picture may not fully reflect therefore the local picture, and the perceived and actual threats.
- National risk assessment is different to a more regional and local picture because it appears to focus on those incidents, which would affect the greatest numbers of the population, e.g. CBRN attack, pandemic disease, and severe weather on a national scale. It also highlights terrorist attack on transport systems and crowded places. While these would involve a limited number of people, they are high profile events, feared by many and when they do occur, they receive comprehensive press coverage. The degree to which these threats would impact on a large proportion of the population is perhaps questionable.
- Recently in the UK, there is a perception of more extreme weather incidents of snow and heat, with their consequent impacts and links to climate change. This demonstrates the importance of reviewing risks and responses on a regular basis (e.g. every six to eight weeks for the Nottingham CRR).

3.4.1 Nottingham Case study

The Nottingham and Nottinghamshire Local Resilience Forum produces a Community Risk Register (Nottingham and Nottinghamshire Local Resilience Forum, 2011). As with all Community Risk Registers, this is an assessment of emergency risks, for use by category one and two responders in emergency and business continuity planning, and is also intended to inform the public of the potential risks. It is compiled using input from the Risk Advisory Group partners, using a scoring system of health, social, economic and environmental factor impacts, to produce a final risk rating of likelihood and impact. Due to the sensitive nature of information relating to deliberate manmade

threats, the Community Risk Register describes only non-malicious hazards. The Risk Register is reviewed every six to eight weeks, with a further comprehensive annual review. Core members of the Risk Advisory Group in Nottingham are representatives of the emergency services, health agencies, and councils:

- NHS Bassetlaw and Nottinghamshire County
- East Midlands Ambulance Service
- Environment Agency
- Health Protection Agency
- Nottingham City Council
- Nottinghamshire County Council
- Nottinghamshire Fire and Rescue Service
- Nottinghamshire Police

Two hazards are rated 'very high' (primary or critical risks requiring immediate attention) in the Nottinghamshire LRF area, namely influenza pandemic and major flooding. 'High' (significant) risks are listed as:

- Local flooding
- Low temperatures and heavy snow
- Heat wave
- Toxic chemical releases
- Industrial explosions and major fires
- Technical failure of services such as gas and water
- Local road accidents (Nottingham and Nottinghamshire Local Resilience Forum, 2011, p.11)

3.4.2. Jerusalem case study

In order to determine risks of a particular urban area, the urban features for assessment were collected and a measuring scale for each urban feature was developed based on a reviewed literature. While every urban feature may have more than one scale, the current focus is on a scale of crime since it is significant for many and diverse cities in Europe, and is the easiest to verify in Israel. The measurement of urban features for natural hazards, industrial accidents or terror threats is a subject of future work.

The urban features with their scales are set forth in the security index presented in Table 1. In order to define the scale's limits, the urban feature's statistics were previewed and the mean was identified, average and most common values, which enabled determining lower and upper boundaries for the weighted scale. The scales were computed in an ESRI environment (ArcMap), which harnesses the power of GIS tools for the analysis of the urban features.

Based on this data, a GIS-based analysis tool to identify and rate high-risk or insecure urban areas is being developed. The system is based on measurement of urban design parameters relating to vulnerability, employing urban morphology analysis and allowing measuring each urban feature in more than one scale. For example, crime and terror relate to urban usage differently. While terror aims to relate to more integrated areas where more people are located, crime occurs in more segregated areas, where fewer people are located. However, the measurements for each activity (crime, terror) should be employed in several scales for better indications.

Measuring urban vulnerability by the same tool enables a dialogue based on the same methods among different participants not aware of each other's scope and goals. Also, generating maps (Figure 7) by the same tool but by different stakeholders allows a powerful visualization of the urban environment, when each map is colored by the scope and goals of the stakeholder who created it. Comparing maps will lead to a common language, and the decision making process will be led by a multi-disciplinary dialogue.

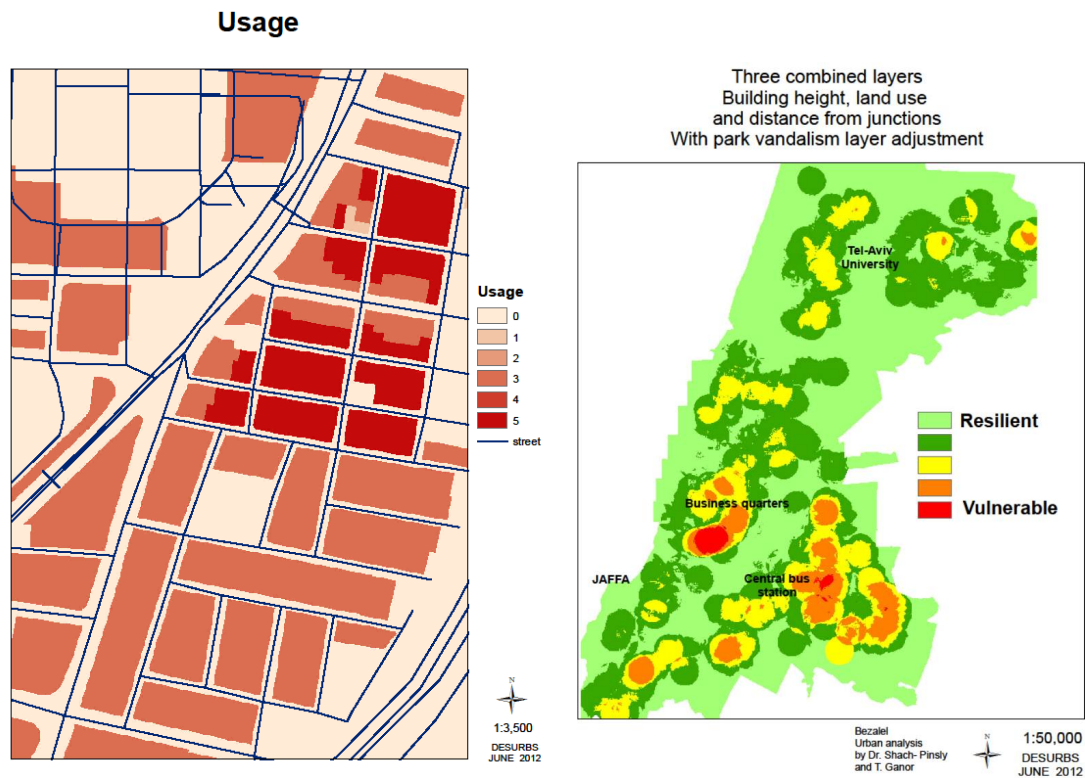


Figure 7 Maps for visualisation of urban environment vulnerability and use

Theme		most resilient 1		2		3		4		most vulnerable 5	
Usage - Permanent		Residence		Sport		industrial, offices, shopping,		Community centers, education		mixed use, parking	
Usage - Not Permanent								cultural venues		parades	
Building typology	Buildings heights	1 – 4 levels		5 – 8 levels		9 – 20 levels		21 – 50 levels		50 and up levels	
	Distance between buildings	0<X<5m	5<X<10m	10<X<15m	15<X<20m	20<X<25m	25<X<30m	30<X<35m	35<X<40m	40<X<50m	x>50m
	Between – buildings and street	0<X<5m	5<X<10m	10<X<15m	15<X<20m	20<X<25m	25<X<30m	30<X<35m	35<X<40m	40<X<50m	x>50m
	Distance between junctions	0<X<5m	5<X<10m	10<X<15m	15<X<20m	20<X<25m	25<X<30m	30<X<35m	35<X<40m	40<X<50m	x>50m
	The distance to emergency services	0<X<5m	5<X<10m	10<X<15m	15<X<20m	20<X<25m	25<X<30m	30<X<35m	35<X<40m	40<X<50m	x>50m
	buildings far from sidewalks	0<X<5m	5<X<10m	10<X<15m	15<X<20m	20<X<25m	25<X<30m	30<X<35m	35<X<40m	40<X<50m	x>50m
	buildings far from fences	0<X<5m	5<X<10m	10<X<15m	15<X<20m	20<X<25m	25<X<30m	30<X<35m	35<X<40m	40<X<50m	x>50m
Space Syntax		1 segregated		2		3		4		5 Integrated	
		short streets								long streets	
		narrow streets								Wide street	
	Number of intersections	few								many	
Transportation	transport lines	few								many	
	Buses/ Light train										
	transit corridor										
	stations										
Streets	Pavement Width	>4.1		2.6-4		2.1-2.5		2-1.1		0-1	
	Street width	>14.1	12.1-14	10-12	8-10	7-8	6	5	4.1-5	3-4	0-3
routes	Number of footpaths	segregated								integrated	
	Width of footpaths										
	access routes										
	Pedestrian routes										

Table 1 The security sensitivity index

4. Stakeholders roles and perceptions

This section of the report addresses the examination of the roles of the key stakeholders for integrated security and resilience assessment in relation to case study cities of Nottingham (and the UK more broadly), and Jerusalem (and Israel more broadly).

4.1 Nottingham/ UK

4.1.1 The Nottingham and Nottinghamshire Local Resilience Forum

This section explores the roles of the stakeholders involved in emergency planning and preparedness in Nottingham and Nottinghamshire.

Table 2 lists category one, two and other responding agencies in Nottinghamshire (from Nottingham and Nottinghamshire Local Resilience Forum, 2011:28-29). This shows a very wide range of organizations that are involved covering health, transport, emergency services, LAs, and many voluntary service agencies.

Table 2 Nottinghamshire responding agencies as of April 2012⁶

Category one responders	Category two responders	Other responders
<ul style="list-style-type: none"> • Ashfield District Council • Bassetlaw District Council • NHS Bassetlaw • British Transport Police • Broxtowe Borough Council • Doncaster & Bassetlaw Hospitals • NHS Foundation Trust • East Midlands Ambulance • Environment Agency • Gedling Borough Council • Health Protection Agency • Mansfield District Council • Newark & Sherwood District Council • NHS Nottingham City • NHS Nottingham County • Nottingham City Council • Notts University Hospitals • NHS Trust • Notts County Council • Notts Fire & Rescue Service • Nottinghamshire Police • Rushcliffe Borough Council • Sherwood Hospitals NHS Trust 	<ul style="list-style-type: none"> • Anglian Water Services Ltd • British Telecom • British Waterways • Central Networks • EoN • UK Health & Safety Executive • Highways Agency • Mainline Pipelines • Network Rail • NHS East Midlands • Severn Trent Water • Star Energy Oil & Gas • National Grid 	<ul style="list-style-type: none"> • Age Concern • Armed Forces • Benefits Agency • British Red Cross • CRUSE Bereavement Care • Girl Guide Association • Government Office East Midlands • HM Coroner • National Association Citizens Advice Bureaux • Nottinghamshire Healthcare NHS Trust • Religious Organisations • Royal Society for Prevention of Cruelty to Animals (RSPCA) • Salvation Army • Samaritans • Scout Association • St John Ambulance • Victim Support • WRVS

⁶ This list is not exhaustive

The Nottingham and Nottinghamshire LRF meets three times a year to discuss emergency planning within Nottinghamshire. In the event of a major emergency, the group would form the Strategic Coordinating Group for that emergency, i.e. it would provide a forum for the co-ordination of a multi-agency response. A number of sub groups or Task and Finish groups with specific areas of responsibility meet six times a year and report to the LRF. These groups include:

- Resilience Working Group Risk Advisory Group
- Risk Advisory group
- Scrutiny Group
- Local Authorities Group
- Critical Infrastructure Group
- Voluntary Agencies Steering Group
- Communicating with the Public Group
- Training Sub Group
- Community Resilience Group
- Industrial Hazards Group
- a range of other Task and Finish groups.

The LRF also works with the police to offer tools and training opportunities. These include Project Griffin which is 'designed to raise the awareness of private security personnel, door staff, security guards, Community Protection Officers and parking wardens to possible terrorist activities',⁷ and Project Argus, developed by NaCTSO, which is a free interactive counter-terrorism tabletop exercise which simulates a terrorist attack as a multi-media experience. There are also bespoke versions of these events, called Argus Professional, that have been designed for construction professionals such as architects, engineers and urban planners⁸.

The stakeholders involved in emergency planning and preparedness in Nottingham and Nottinghamshire include:

Nottingham County Council

The partnership between the Nottinghamshire County Council and a full range of statutory and non-statutory bodies is formalised through the Nottingham and Nottinghamshire Local Resilience Forum. The Risk, Safety and Emergency Management Board deploy Nottingham County Council's resources and response to a major emergency, as detailed in the council's Major Emergency Plan. Each department is represented on this. The Emergency Planning Team coordinates planning, preparation and training on behalf of the Nottinghamshire Country Council (NCC). It consists of the Head of Resilience, and six emergency planners (three of whom are senior) and works closely with all internal departments, the emergency services, health organisations, government agencies and others. The Emergency Planning Team has produced a wide range of generic and specific emergency plans. Generic emergency plans are for the consequences of emergencies rather than a specific hazard or threat. These are:

⁷ <http://www.nottinghamcity.gov.uk/index.aspx?articleid=4152>

⁸ These Argus Professional events are also provided (with support from NaCTSO) for undergraduate students at Loughborough University involved in the 'Architectural, Engineering and Design Management' BSc programme. Loughborough is one of only a handful of Universities that runs these courses for undergraduates.

DESURBS Deliverable 2.1: Roles of key stakeholders

- NCC Major Emergency Plan (contains the roles and responsibilities of each agency and can be tailored to a variety of different incidents)
- NCC Emergency Transport Plan
- NCC Public Information Centres Plan
- NCC County Emergency Centre Plan
- NCC Departmental Emergency Plans
- Multi-agency Emergency Media Plan
- Multi-agency Emergency Accommodation Plan
- Local Resilience Forum Flood Response Plan
- Local Resilience Forum Humanitarian Assistance Centre Plan
- Local Resilience Forum Chemical, Biological, Radiological and Nuclear (CBRN) Plan
- Local Resilience Forum Pandemic Influenza Plan
- Local Resilience Forum Emergency Mortuary Plan

Specific Emergency Plans cater for incidents occurring at specific sites. These are:

- Misterton Petroleum Storage Depot
- Major Accident Hazard Pipelines
- Nottingham Forest Football Club Major Incident Plan
- Mansfield Town Football Club Major Incident Plan
- Nottinghamshire County Cricket Club Major Incident Plan

The Emergency Planning Team also has responsibility to work with other organisations to provide:

- emergency accommodation in case of evacuation;
- emergency transport;
- co-ordinating services as part of the emergency response;
- assistance centres (providing information and assistance to survivors and the families of the missing, injured or killed);
- emergency information; and
- advice to major sporting venues, Parish Councils, community groups and schools.⁹

Nottingham City Council also operates an emergency centre in the city centre. This uses the AIMS incident management system¹⁰, which allows the effective management and coordination of response during an emergency or crisis situation. The emergency centre control room incorporates all relevant agencies for the particular emergency, and might include a senior emergency planner, Council department representatives (e.g. adult services, children's services) the Highways Agency, the police, fire and ambulance services. It also has AV (including News 24 and Sky News as live pictures reach the news very rapidly), CCTV, GIS maps and 700 camera facilities. A manual system also exists in case these facilities fail. The control room is opened for training exercises once a year, such as Exercise Watermark¹¹, which tested responders to incidents from surface water, river and reservoir failure through to tidal flooding. Actual situations (e.g. influenza epidemics, serious road traffic accidents) would also warrant the control room to be opened.

The Police Service

⁹ <http://cms.nottinghamshire.gov.uk/home/youandyourcommunity/staysafe/emergencyplanning>

¹⁰ <http://www.atlasops.com/AIMS%20overview.htm>

¹¹ <http://www.exercisewatermark.co.uk/en/homepage.aspx>

DESURBS Deliverable 2.1: Roles of key stakeholders

The LRF offers advice on household emergency planning and on designing a Business Continuity Plan (BCP) for local businesses and voluntary organizations. The latter means helping the business community to ensure they have their own 'robust business continuity arrangements to continue their business during and following emergencies that have an effect on their business' (NCC, 2009, p.2). The importance of BCPs was confirmed in an interview with a Nottinghamshire Police Sergeant, whose role is to manage a team of business crime reduction officers, architectural liaison officers (trained to look at plans for proposed bills from a crime prevention point of view), design advisors (looking at potential threats inherent in design e.g. underground car parks) and crime reduction officers. In order to increase the level of communication with the public, the police uses crime as a catalyst to engage with businesses, and the fear of crime is used to engage with victims in the immediate vicinity. Staff can also be seconded to other agencies such as the fire service and trading standards. There are also good links with the Chamber of Commerce and the Federation of Small Businesses – which effectively reaches those the team's needs to engage with. A police portal networking system has been developed as a tool to counteract 'the *siloed* approach' which has historically been in place for emergency services and businesses relating to risk management. Examples given of the advantages to such networking are that spending by businesses on crime prevention is reduced and is more productive, and that communication can be tailored to a particular sector or community, and geographic area. This network has been developed in response to a lack of collaboration in the past. Whilst this has improved, they still felt there was potential for further strengthening of partnerships and collaborative working between agencies, and between the city and county hubs.

The NHS Trust

The Queens Medical Centre (QMC) is an acute trust. Acute trusts make sure that hospitals provide high-quality healthcare and that they spend their money efficiently. It is also a category one responder. As a large hospital, QMC can cope with more than smaller hospitals are able to before it implements its major incident plan. One of the most difficult potential incidents is a CBRN attack in Nottingham city, for which there is a CBRN sub group of the LRF and a specific plan. An incident of this type might mean 1000s of individuals presenting to the QMC, as well as those sent there by the emergency services. The QMC has the facility to lock down the hospital doors in this instance. The hospital has a decontamination unit that would be set up for such emergencies.

Box 2: Learning points from the Nottingham case study

- A successful Local Resilient Forum (LRF) depends on having the right individuals as members around the table. There is no obligation of attendance so the fact that they are there indicates support and enthusiasm.
- The LRF is not a legal entity: this can be seen as a weakness as there is no legal requirement for involvement. There is also no budget line for its activities and all costs associated with an LRF response are met by the relevant agency or sector involved e.g. health, the police etc. The current economic climate may impact on the membership and activities of the LRF.
- Nottingham Business Crime Police have implemented a network to communicate with local businesses and domestic premises around the site of any crime or incident. Hospitals and health centres have differing capacity to cope with emergency situations. As a large hospital, QMC can accommodate more casualties than smaller hospitals before it implements its major incident plan.
- The ability to invoke mutual aid, i.e. an agreement among emergency responders to lend assistance across jurisdictional boundaries, has proved vital in responding effectively to certain incidents beyond the capacity of local services.

4.1.2. The role of UK stakeholders in planning process

Based on Boshier et al. (2007) study and Nottingham case study data collection, the matrix presented in Figure 8 was developed: it illustrates which stakeholders *are* or *should be* involved in disaster-risk management activities and at what stage of decision – construction – operation process (DCOP) they should be involved.

DCOP in England can be best described using the stages¹² suggested by Royal Institute of British Architects (RIBA) 'Plan of work', which is a definitive model for the building design and construction process (RIBA, 2007). The process starts with the 'Preparation' and 'Appraisal' and continues through the pre-construction and construction stages to the 'Change of use', when the whole process starts again.

It is important to notice that not all stakeholders have to be involved/ are involved in every stage of the process due to the professional remits.

Figure 8 shows that architects are perceived as the most important stakeholders, and civil engineers, clients, developers, and emergency/ risk managers are also seen as key stakeholders who should provide the essential inputs. Trade organisations/ representatives and the general public were not perceived as key participants in DCOP.

¹² Although current RIBA stages are being revised and will be changed in 2013 (RIBA, 2012), the new proposed stages are not dramatically different, and the changes would not affect the results of this paper. The main change is that there is less emphasis on the sequential format and allowing for overlap.

Generic planning/ design/build phases	Preparation	Design	Pre-Construction phases	Construction phases	Use
DRR inputs	Hazard identification			Hazard identification review	
	Mitigative adaptations				
				Preparedness planning	Preparedness planning (including response)
					Recovery planning
Architects/ designers					
Client					
Contractor					
Developers					
Emergency services					
Emergency/ risk managers					
End user					
Engineers					
Environmental consultant					
General public					
Government agencies					
Insurers					
Local authorities					
Material suppliers					
Planners					
Professional/ trade organisations					
Project managers					
Quantity surveyors					
Surveyors					
Utility companies					
Key					
Stakeholders do have an input (actual involvement)		These are key stages for DRR input			
Stakeholders should have an input (ideal scenario)					
Stakeholders input is not required					

Figure 8 The alignment of DRM activities with the design-construction-operation process and the inputs from key stakeholders for each stage in the UK

4.2 Jerusalem/Israel

The Israeli planning and building law clearly differentiates between the planning approvals and the building permits. In general terms, planning changes are decided at the District Planning and Building Commission, with consultation to the Local Planning and Building Commission (which in urban situations is the Municipality), while building permits are issued solely by the Local Planning Commissions at the municipal level. There is a complex appeal process that does not affect the professional inputs.

The following stakeholders and involved DCOP in Jerusalem:

During the **Preplanning phase** various types of information are requested, including the following (with requesting information from the following stakeholders directly affecting risk preparedness):

- Ministry of Environmental Protection – when an environmental impact assessment is required.
- Israel Electric Company – for electric infrastructure information.
- Civil Aviation Authority – for structures close to airports or any structure that is planned higher than 60 meters.
- Ministry of Defense – the Minister of Defense will assign a person who will transfer information according to existing local plans, and to every plan regarding a structure higher than 60 meters.
- Local Authorities – will provide information regarding local infrastructure such as water, drainage (which is managed at a national level), sewer, traffic, lighting system.
- Municipal departments – will provide general data such as permitted usage, plans that apply on the perimeter, restrictions on design and appearance.

After the plans have been evaluated by professionals, the Planning and Building Commissions take a decision to deposit the plan over a period of 60 days and then await public reaction, which can affect the plan.

During the **Design phase** (during which building permits have to be obtained), the client contacts an architect and an engineer who prepares a proposal and programme according to the information of the city plan as approved. A building permit is requested from the Local Planning Commission. The building permit request includes proof of property ownership, updated land measurements, plans, sections and elevations. The details of the developer, architect, engineer and a supervisor for the building frame appointed by the contractor are provided. They have to provide a declaration that all the plans and calculations are according to the latest building standards including response to earthquakes (The contractor chooses a representative who will take responsibility that the building frame is built according to the approved plans). Further approvals are required including infrastructure connections and where relevant a further environmental opinion. The building permit papers are evaluated by:

- Local Commission's engineer and his professional team
- Relevant municipal departments and other authorities.

Stakeholders directly involved with risk might include inter alia:

DESURBS Deliverable 2.1: Roles of key stakeholders

- Accessibility expert's approval.
- Ministry of Health – for health, public institutions, food related structures or buildings meant for businesses that require a business permit by law (such as gyms, wedding halls).
- Home front command – instructions regarding safety rooms or bomb shelters.
- Israel Fire and Rescue services – instructions regarding any building except residential buildings that are not high rises.

During the **Construction phase** the following stakeholders are involved:

- Developer/ client
- Architect
- Engineer
- Foreman
- Local Commission's building inspector
- Licensing inspection (municipal police department)
- Other supervision mechanisms as standards for concrete and sanitary works;
- Construction waste treatment authentication

It should be noted that this supervision is authorised with the final document of completion and no further supervision takes place. This lacuna was highlighted when 23 people were killed and 380 injured when a wedding hall in Jerusalem collapsed in 2001, after changes in the fabric of the building were made without full supervision.

During the **Post construction phase** stakeholders involved include:

- Owners/renters
- Israel Electric Company
- Local Commission's building engineer
- Architect/ planner
- Construction engineer

Business licensing might be required if related to non-residential activities that are controlled by the Licensing Law. Business licensing inspection is carried out according to the relevant uses. It should be noted that this is an on-going inspection that takes place at least annually by the following stakeholders:

- Police
- Ministry of Health
- Ministry of Agriculture
- Municipality
- Fire and Rescue

In order to better understand the Israeli planning process, and the manner in which it relates to security threats, interviews with the relevant stakeholders were conducted. In order to demonstrate how different stakeholders are involved in different planning phases, three 'real time' events were chosen: Planning for a large scale public event (e.g. demonstration, book fair); light rail counter terror measurements planning; and retrofitting a public institution in the Old City of Jerusalem. These events were chosen due to their versatility in scope, function and meaning (for example, the Old City

DESURBS Deliverable 2.1: Roles of key stakeholders

of Jerusalem is a fine example of planning in a major conservation area). Interviews have been conducted with five stakeholders (see Appendix 1 to see their affiliation), yielding 12 answered spreadsheets (see Appendix 4 for an example of Jerusalem interviews data).

Four main conclusions can be drawn from the responses:

- Planning procedures and regulations were not fully understood by officials outside the planning departments.
- Affecting crime by planning was recognized by officials outside the planning departments, while officials within the planning departments were skeptical of the power of planning to affect crime patterns.
- Many officials recognized a lack of a clear workflow in everyday functions, while acknowledging a methodical disregard of official protocol during emergencies.
- Official emergency protocols are constantly updated however not practiced enough and are seen as stand-alone with little integration in the planning process.

These conclusions point to a lack of a clear urban assessment guideline, which would connect the stakeholders and generate an educated discussion using the same language.

The interview data related to the events has also been incorporated into a diagram similar to the one in Figure 8. This allows the overall representation of the key stakeholders' involvement in DCOP activities (see Figure 9). Jerusalem stakeholders have been translated into the groups of stakeholders suggested in Figure 8, however not all the key stakeholders groups are represented as can be seen in Figure 9. The key stakeholders that should be involved are perceived to be local authorities. In addition, big role is played by the Home Front Command and the Army Search and Rescue Units.

Generic planning/ design/build phases	Preparation	Design	Pre-Construction phases	Construction phases	Use
DRR inputs	Hazard identification			Hazard identification review	
	Mitigative adaptations				
				Preparedness planning	Preparedness planning (including response)
					Recovery planning
Architects/ designers					
Client					
Contractor					
Developers					
Emergency services					
Emergency/ risk managers					
End user					
Engineers					
Environmental consultant					
General public					
Government agencies					
Insurers					
Local authorities					
Material suppliers					
Planners					
Professional/ trade organisations					
Project managers					
Quantity surveyors					
Surveyors					
Utility companies					
Key					
Stakeholders do have an input (actual involvement)		These are key stages for DRR input			
Stakeholders should have an input (ideal scenario)					
Stakeholders sinput is not required					
Stakeholder does not exist					

Figure 9 The alignment of DRM activities with the design-construction-operation process and the inputs from key stakeholders for each stage in Israel

4.3 Comparison of key stakeholders' role in Nottingham and Jerusalem

In both cases, architects were perceived to be the most important construction sector stakeholder, who could provide essential inputs into DRR throughout the DCOP. It was suggested that other significant stakeholders were clients, developers, and engineers. Planners and emergency services stakeholders were perceived as not being involved in some of the phases; however it was admitted that they should have a bigger input in DRR, particularly during the design and pre-construction phases. Both cases allocate only a small role to trade organisations and representatives, insurers, and general public. End-users were also perceived as a non-important stakeholder. This may be explained by the possibility that the end-user is not necessarily known during the earlier stages of the DCOP: for example, it may not be clear what companies are going to occupy the space in office developments.

The biggest difference in the two case studies lies in the involvement of government agencies and local authorities. This dissimilarity is evident throughout DCOP: despite the fact that there are policies supporting and encouraging the involvement of local authorities in the DRR activities in England, the evidence in Figure 8 suggests that UK local authorities are engaged in DRR only if they are expected to be; on the contrary, they are seen as important stakeholders with formal specified roles and are involved in all the stages of the process in Israel. A good example of the involvement of the governmental agencies is the role played by the Home Front Command (HFC)¹³ that is perceived to be one of the main actors in DRR activities. HFC does not have an equivalent in England. HFC is a military branch in charge of defending and managing civilians during times of crisis (HFC, 2013). It sees itself as the only non-political mechanism during the process of planning permissions, as they do not represent (and thus cannot be influenced by) construction stakeholders, private sector or government bodies.

Another big difference is in the involvement of environmental consultants, who, in the case of Nottingham, are seen as an integral part of DRR and are suggested to play even bigger role during the crucial stages of design and pre-construction. In Jerusalem, they are only involved at the first stage, and it is suggested that their involvement should end there; however this may soon change since, according to some of the interviewees, the environmental practices are slowly being implemented in the public agenda.

Overall, during the process of data collection, it became clear that there is an apparent disconnect between the stakeholders who should be involved and are involved in reality; in addition, although some of the stakeholders are involved in DRR, their inputs are not always formal and clear.

In terms of the time of the involvement, Figures 8 and 9 suggest that the crucial phase of the negotiation and implementation of DRR measures is during the first three stages of the process (preparation, design, and pre-construction). However, while the early phases of DCOP are understood as being essential for DRR, stakeholders' engagement does not necessarily take place. For example, Figure 8 shows that emergency services are not necessarily involved until the construction phase, when it can be too late to implement DRR measures that have not been

¹³ Since only generic stakeholders' groups are presented in Figures 4 and 5, the Home Front Command (HFC) is included in 'Governmental Agencies' group of stakeholders

considered, and thus making them more expensive but less effective. The situation can also be opposite, if any unnecessary DRR measures have been installed.

The preparation phase is suggested to be largely ignored, particularly in the case of Nottingham, where only stakeholders directly involved in the construction process (e.g. architects, engineers, client) have an input. It would, however, be beneficial to the project if more stakeholders are involved, as during the preparation stage developers can discuss the project with a number of agencies in order to identify and address any areas of conflict, and thus to ensure that the application goes smoothly (While and Howe, 2005). Importantly, issues resolved at this stage are also less timely consuming and costly. However, little discussion takes place in reality mainly due to a perceived deficit of knowledge about the possible solutions and their effects, or about the bodies that can highlight potential barriers.

The most involvement occurs (and should occur) during the design, pre-construction and construction phases, with both private and public stakeholders playing various roles. The pre-construction phase was identified by the stakeholders as *the* critical phase in DCOP when DRR should be integrated. Figures 8 and 9 demonstrate that the majority of the stakeholders are involved in this phase, however large amount of the stakeholders involved does not guarantee the successful and effective implementation of DRR. This is due to the lack of interaction between the involved actors. There is a lack of a clear workflow in everyday functions, as well as a methodical disregard of official protocol during emergencies, as acknowledged by some of the respondents in both case study cities. Despite the official emergency protocols being constantly updated, they are not practised enough. Another reason for the lack of implementation of DRR is the lack of capacity: for example, despite the fact that HFC has a capability to be more engaged in the DRR and are theoretically required to participate in the local building committees, the main challenge is the lack of capacity due to the lack of human resources. Similar situations are also a reality in Nottingham, where local authorities lack financial resources and thus personnel to be more proactively engaged in DRR activities with the construction sector. Efforts have been made in Nottingham for encouraging the cooperation of various stakeholders. For instance Fisher et al. (2012) report that the Local Resilience Forum (LRF) consists of a multi-agency partnerships made up of representatives from local public services, including the emergency services, local authorities, the NHS, the Environment Agency and others government and non-governmental agencies. However, while many stakeholders find this mechanism useful, it faces such challenges as funding, inter-agency communication, lack of decision-making etc. In addition, the members of LRF do not necessarily include a large number of construction stakeholders (Fisher et al. 2012). For more information, see Appendix 5.

A wide range of stakeholders' inputs occurs during the construction phase; this however is not the most crucial phase of DCOP with regards to DRR, since (in the best case scenario) any DRR measures should have already been taken into account. Similarly, consideration of DRR during the post-completion phase is an 'afterthought'; however, in case of retrofit or change of use, it is crucial for the stakeholders to reconsider the risks and use this opportunity for the improvement of the DRR measures.

5. Conclusions and Recommendations

This deliverable presents an overview of the roles of key stakeholders in DCOP using the examples of two case study cities (Nottingham and Jerusalem). Understanding in regard to the case study city of Nottingham is significant, and has enabled the initial creation and development of the ISR framework for WPs 2.3 and 2.4, the structure for which has been incorporated into this report. A field trip to Jerusalem in January 2012 has led to a significant increase in understanding regarding the case study city, and conducted interviews with Israeli stakeholders provided a further insight into Jerusalem case study.

There are diverging planning and building frameworks in Europe, those that are more centralistic as in Jerusalem/Israel and others that are more dispersed as in Nottingham/UK. These also affect policies of integration between emergency services and the day-to-day planning processes. It would appear that the two case studies highlight these factors and can lead to streaming future design guidelines and the relevant stakeholder involvement according to pre-determined planning frameworks. These issues will be further expanded in WP6 in the training sessions with stakeholders.

Based on this deliverable, the authors of the report have submitted the publication to the Special Issue of ICE Urban Design and Planning on Making Cities more Resilient.

6. References

- Alderson A. and Copping J. (2007), 'Police joined dark side to regain Nottingham', *Daily Telegraph*, 5 August 2007
- Bosher L.S., (ed.), (2008) *Hazards and the Built Environment: Attaining Built-in Resilience*, Taylor and Francis, London
- Bosher L.S., Dainty A.R.J., Carrillo P.M. and Glass J., (2007) 'Built-in resilience to disaster: a pre-emptive approach', *Engineering, Construction and Architectural Management*, Vol. 14, No. 5, pp. 434-446
- Bosher L.S., Dainty A.R.J., Carrillo P.M., Glass J., and Price A.D.F., (2009) 'Attaining improved resilience to floods: A proactive multi-stakeholder approach', *Disaster Prevention and Management*, Vol.18, No1, pp.9-22
- Bosher L.S., Carrillo P.M., Dainty A.R.J., Glass J., and Price A.D.F., (2007a) 'Realising a resilient and sustainable built environment: Towards a strategic agenda for the United Kingdom', *Disasters: The Journal of Disaster Studies, Policy & Management*, Vol.31, No.3, pp.236–255
- Bosher L.S., Dainty A.R.J., Carrillo P.M., Glass J., and Price A.D.F., (2007b) 'Integrating disaster risk management into construction: A UK perspective', *Building Research & Information*, Vol.35, No.2, pp.163-177
- Cabinet Office, (2010a) *National Risk Register of Civil Emergencies 2010 edition*, HMSO, London
- Civil Contingencies Secretariat, (2004) *Civil Contingencies Act 2004: a short guide*. Cabinet Office, London
- Civil Contingencies Secretariat, (2004a) *The Lead Government Department and its role - Guidance and Best Practice*, Cabinet Office, London
- Civil Contingencies Secretariat, (2011) *Keeping the Country Running: Natural Hazards and Infrastructure*, Cabinet Office, London
- Clarke M. and Soria V., (2009) 'Terrorism in the United Kingdom: Confirming its Modus Operandi', *RUSI Journal*, Vol 154, No.3, pp. 44-53
- Coaffe, J. (2009) *Terrorism, Risk and the Global City – towards urban resilience*. Ashgate, Farnham.
- Coulthard, T.J., Frostick, L., Hardcastle, H., Jones, K., Rogers, D., Scott, M. and Bankoff, G. (2007), *The 2007 Floods in Hull, Final Report by the Independent Review Body*, Hull City Council, Hull, 21 November
- Crichton, D., (2008) 'Role of insurance in reducing flood risk', *The Geneva Papers*, Vol. 33, pp. 117-32
- Crichton, D., (2005) *Flood risk and insurance in England and Wales: are there lessons to be learnt from Scotland?*, Technical Paper Number 1, Benfield Hazard Research Centre, University College London.
- CSARN, (2011) *Security Risk Monitor (UK and Ireland)*, CSARN Ltd. London

DESURBS Deliverable 2.1: Roles of key stakeholders

Department for Business, Innovation and Skills, (2010) *Healthy high street? A healthcheck for high streets and town centres*, Department for Business, Innovation and Skills, London

Department for Communities and Local Government, (2002a) *Planning Policy Guidance 17: Planning for open space, sport and recreation*, DCLG Publications, London

Department for Communities and Local Government, (2011) *Planning Policy Guidance 13: Transport*. DCLG Publications, London

Department for Transport, (1998). *A new deal for everyone - white paper*, Department for Transport, London

Department for Transport, (2009) *Guidance on Local Transport Plans*, Department for Transport, London

Department for Transport, (2000) *Transport Ten Year Plan*, Department for Transport, London

Department of Health, (2007) *Pandemic flu: a national framework for responding to an influenza pandemic*, 281768, Department of Health, London

Doward, J. (2007) 'Brutal ganglord who fell victim to his own drugs', *The Observer*, 5 August 2007

DTLR, (2001), *Planning Policy Guidance 25: Development and Flood Risk*, December 2001, Department for Transport, Local Government and the Regions, HMSO, London

Environment Agency (EA), (2005), *Fluvial Trent Strategy*, Environment Agency, London

Environmental Agency (2013), *Risk of flooding from rivers and seas: Nottingham*. Interactive map. Available at <http://www.environment-agency.gov.uk/homeandleisure/floods/31652.aspx> (accessed 14/06/13).

Fisher, J., Harre-Young, S.N. and Boshier, L. (2012) Understanding the relationship between resilience and sustainability: emergency planning and the design of urban space. In *Proceedings of REAL CORP 2012 Re-mixing the City- Towards Sustainability and Resilience?* (Schrenk, M., Popovich, V.V. and Zeile, P. (eds)). 14th-16th May 2012, Schwechat, Austria, pp. 965-973.

Gehl, J. (2010) *Cities for People*. Washington DC, Island Press.

Gibbs B and Haldenby A (2006) *Urban crime rankings*. See http://reform.co.uk/client_files/www.reform.co.uk/files/urban_crime_rankings.pdf (accessed 14/06/13).

Great Britain, Parliament (2005), *The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005*, Statutory instrument No. 2042 edn, London

Harre-Young, S. (2012) *The Relative Performance and Consequences of Protecting Crowded Places from Vehicle Borne Improvised Explosive Devices*. Unpublished PhD thesis, Loughborough University

Harre-Young, S., Boshier, L., Dainty, A. and Glass, J., (2010) 'Counter-terrorism complexity: identifying opportunities for innovation'. In Anumba, C., Bouchlaghem, N.M., Messner, J.I., and Parfitt, M.K.,

DESURBS Deliverable 2.1: Roles of key stakeholders

(eds), *Proceedings of the 6th International Conference on Innovation in Architecture, Engineering and Construction*. 9-11 June, pp. 1121-1130, Pennsylvania State University, USA

Health and Safety Executive, (2001) *Reducing risks, protecting people: HSE's decision making process*, HMSO, London.

Highways Agency, (2010) *Transport 2010: The 10 Year Plan*, Highways Agency, London

HM Government, (2010) *Working together to protect crowded places*. Home Office, London

HM Government, (2010a), *A strong Britain in an age of uncertainty: The National Security Strategy*, Home Office, London

HM Government, (2010b) *Securing Britain in an age of uncertainty: the strategic defence and security review*, HMSO, London

HM Government, (2010c) *Emergency response and recovery*. v3, HMSO, London

HM Government, (2010d) *Protecting Crowded Places: The Planning System and Counter-Terrorism*, Home Office, London

HM Government, (2010e) *Protecting Crowded Places: Design and Technical Issues*, Home Office, London

HM Government, (2008) *National Emergency Plan – Fuel (NEP-F)*, Home Office, London

HM Government, (2006) *Security Requirements for Radioactive Sources*, HMSO, London. (Restricted).

HM Government, (2004), *Emergency Preparedness*, HMSO, London

HM Government, (2000) *Control of Major Accident Hazards Regulations (Northern Ireland) 2000*. 93., HMSO, London

HM Government, (1998) *Security and Emergency Measures (Water And Sewerage Undertakers) Direction 1998 - Notification and Guidance*, HMSO, London

HM Government, (1993) *Radioactive Substances Act*, HMSO, London

HM Government, (1975) *Reservoirs Act 1975*, HMSO, London

Home Office, (2010a) *Audit and Review of Olympic and Paralympic Safety and Security Planning: Summary*, Home Office, London

Home Office, (2010b) *London 2012 Olympic and Paralympic Safety and Security Strategic Risk Assessment (OSSSRA)*, Home Office, London

Home Office, (2011) *London 2012: Olympic and Paralympic Safety and Security Strategy*, Home Office, London.

Home Front Command (HFC) (2013). See <http://www.oref.org.il/International/14-en/PAKAR.aspx> (accessed 14/06/2013).

DESURBS Deliverable 2.1: Roles of key stakeholders

Israeli Science and Technology National Committee (2011) *Protocol no. 78*. See <http://www.knesset.gov.il/protocols/data/rtf/mada/2011-01-17.rtf>. (accessed 14/06/2013).

Knesset, 1965. Israel Planning and Building Law. Available at <http://www.moit.gov.il/NR/exeres/D129ACB3-7445-4F76-8225-FC2D9BFAEB34.htm> (accessed 14/06/2013) (*in Hebrew*).

Lopez, M.J.J. and Van Nes, A. (2007) Space and crime in Dutch Built Environment: macro and micro scale special conditions for residential burglaries and thefts from cars. In: *Proceedings of the 6th International Space Syntax Symposium, Istanbul, Turkey*.

Mulholland Research and Consulting, (2003) *Perceptions of privacy and density*. Report on the research findings. Available at <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/perceptions-of-privacy-and-density-in-housing.pdf> (accessed 14/06/2013).

NaCTSO, (2006) *Counter terrorism protective security advice for stadia and arenas*, ACPO, London

Nottingham and Nottinghamshire Local Resilience Forum, (2011) *Community Risk Register*. 3.7 edn, Nottingham and Nottinghamshire Local Resilience Forum, Nottingham

Nottingham City Council, (2006), *Some facts about crime in Nottinghamshire*, Nottingham City Council. July 2006.

Nottinghamshire County Council, (2009) *Elected Members' Emergency Plan (Draft)*, Nottinghamshire County Council, Nottingham, September 2009

Office of Science and Technology, (2004) *Foresight Flood and Coastal Defence Project*, Office of Science and Technology, London

Office of the Deputy Prime Minister, (2004) *Safer Places: The planning system and crime prevention*, Office of the Deputy Prime Minister, London.

Office of the Deputy Prime Minister, (2005) *Planning Policy Statement 6: Planning for Town Centres*, Office of the Deputy Prime Minister, London

Pedahzur, A., and Paran, G. (2003), *Terror in Jerusalem*. Jerusalem Institute for Israeli Studies, June 30.

Pitt, M., (2008) *Learning lessons from the 2007 floods: an independent review by Sir Michael Pitt: final report* (also known as the Pitt Review), Cabinet office, London

Savitch, H. V. (2005), *An Anatomy of Urban Terror: Lessons from Jerusalem and elsewhere*. *Urban Studies*, 42 (3), 361-95.

Sport England, (2005) *Spatial planning for sport and active recreation*, Sport England, London

State Comptroller and Ombudsman Report (2010), *Carmel fire report*. Available at <http://www.mevaker.gov.il/serve/contentTree.asp?bookid=616&id=2&contentid=&parentid=undefined&sw=1366&hw=698> (accessed 14/06/2013)

DESURBS Deliverable 2.1: Roles of key stakeholders

Transport Security and Contingent Directorate, (2007) *Light Railway Security - Recommended good practice*. 67DSGO2728. Department of Transport, London

UNADR, (2011) *UNADR - UN ADR 2011 European Agreement*.

Welsh Assembly Government, (2009) *Technical Advice Note 16: Sport, recreation and open space*. 16, Welsh Assembly Government, Cardiff

While, I. and Howe, J. (2005) Unpacking the barriers to sustainable urban drainage use. *Journal of environmental policy and planning*, 7 (1), 25-41.

Appendix 1: Key informant interviews

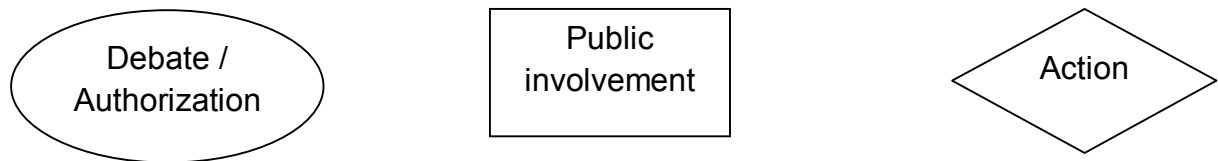
UK interviewees:

Crime Prevention Officer, Police Force
Senior Emergency Planning Officer, Local Authority
Emergency Planning Officers, Acute Trust
Emergency Planning Manager, Local Authority
Manager, Voluntary Service
Emergency Planning Officer, Fire Service
Manager, environmental body
Emergency Planning Officer, Mental Health Trust
Emergency Planning Officer, health body
Emergency Planning Officer, Care Trust
Architect, Architectural Practice

Israel interviewees:

Chief Architect, Local Authority
Architect, Architectural Practice
Manager, Local Authority
Manager, Police Force
Architect, Architectural Practice

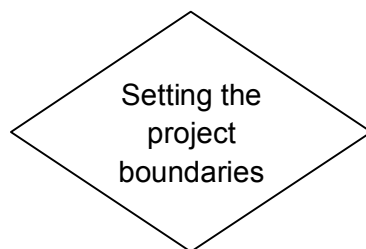
Appendix 2: A companion to planning and execution of street development and upgrade by the Jerusalem municipality (Provided by WP8)



Comments

Planning stage

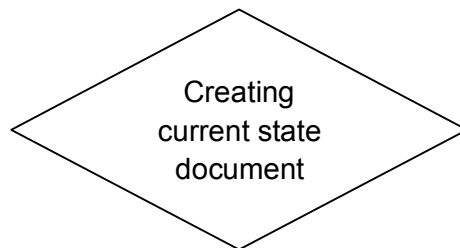
Responsible body



Agreeing developer by city engineer

Developer

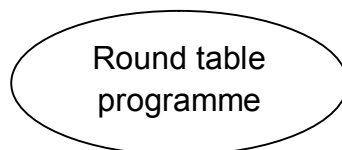
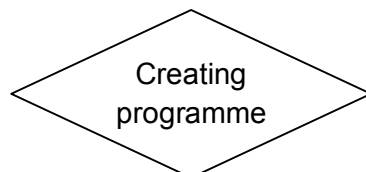
Time table according to specific regulations; document according to specific instructions.



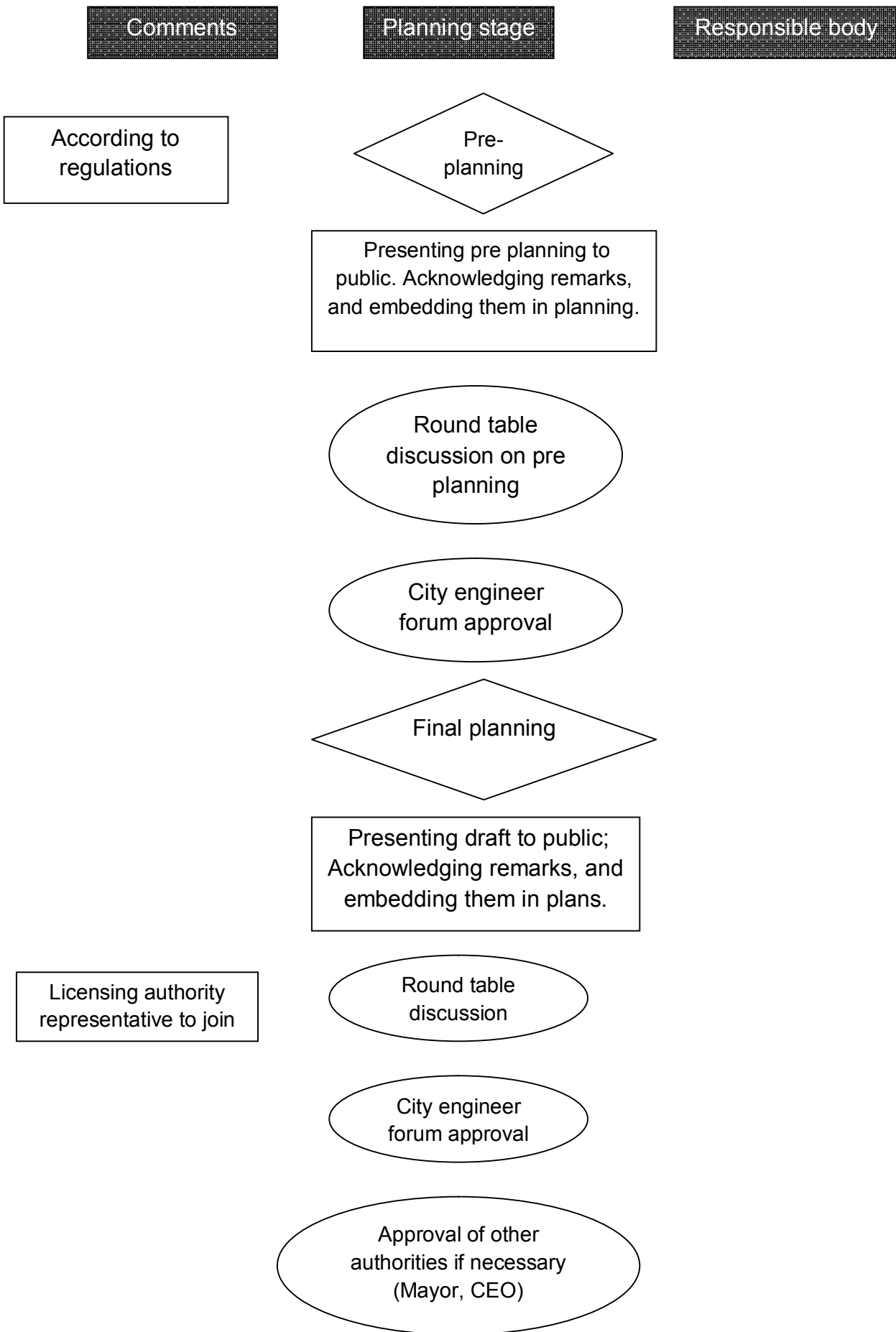
Planning office

Public representatives to define scope of presentation - Approval by the Local Commission

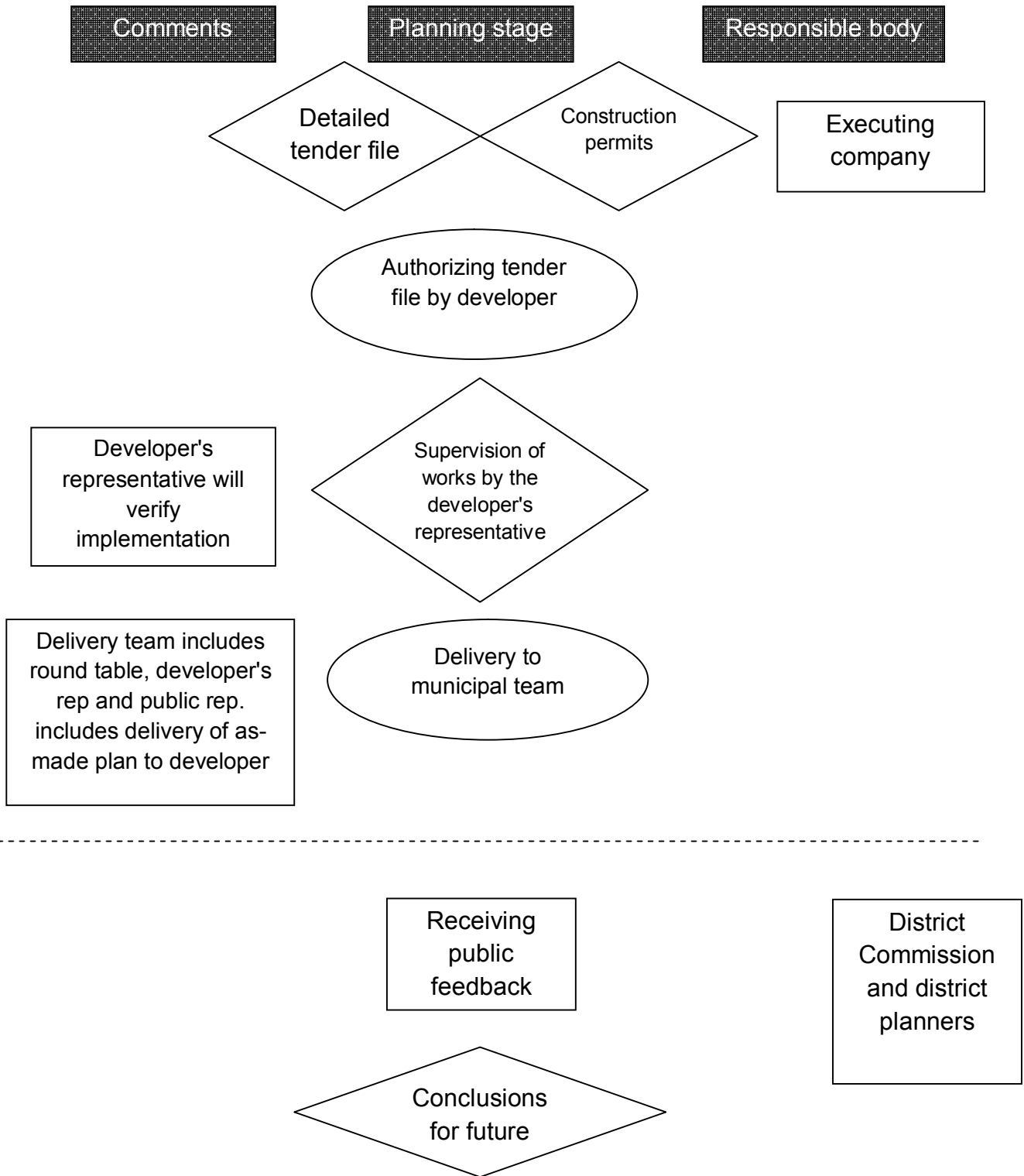
Acknowledging stakeholders, viewing vision, expectations and requests



DESURBS Deliverable 2.1: Roles of key stakeholders



DESURBS Deliverable 2.1: Roles of key stakeholders



Appendix 3: Emergency response and recovery in the UK

Emergency response and recovery

The UK's approach to emergency response and recovery is founded on an approach in which operations and decisions are made at the lowest appropriate level¹⁴. In England, the Home Secretary has overall responsibility for safety and security, emergency preparedness and response. He/she also chairs a Ministerial Committee on National Security, International Relations and Development (Sub-Committee on Protective Security and Resilience) (NSID (PSR)), which oversees security and resilience issues (HM Government, 2010). See Figure 1 for an overview of the CCA framework in the UK. Responsibility for counter-terrorism sits within the Office for Security and Counter-Terrorism (OSCT), which is part of the Home Office. To achieve this, they coordinate the activities of many agencies and government departments and also have direct responsibility for certain aspects of the counter-terrorism strategy. This strategy is known as CONTEST, and focuses on the threat from international terrorism and has been in existence since 2003.

The aim of CONTEST is 'to reduce the risk to the UK and its interests overseas from international terrorism, so that people can go about their lives freely and with confidence'.¹⁵ The key elements of this are 'Pursue', 'Prevent', 'Protect' and 'Prepare'. 'Pursue' is the detection and disruption of terrorism; 'Prevent' aims to prevent the support of extremism; 'Protect' focuses on reducing vulnerability; and 'Prepare' seeks to mitigate the effects of an attack. In the event of a terrorist incident the Office for Security and Counter-Terrorism (OSCT) is responsible 24 hours a day, 365 days of the year for activating and co-ordinating the Home Office crisis response. Its main responsibilities are to:

- support the Home Secretary and other ministers in directing and implementing CONTEST;
- deliver aspects of this strategy directly, through legislation, guidance and funding;
- set the strategic government response to terrorism-related crises through the Cabinet Office Briefing Rooms (COBR) mechanism;
- manage the Home Secretary's statutory relationship with the Security Service; and
- manage the Olympic/Paralympic safety and security programme for the London 2012 Games.¹⁶

A designated Lead Government Agency or a devolved administration is made responsible for the management of a central government response (Civil Contingencies Secretariat, 2004a). Table 1 indicates the Lead Government Agency for specific hazards. There are three levels of engagement of the Lead Government Agencies:

- Level 1 where the response is by the Lead Department Minister, with advice from the Civil Contingencies Secretariat (CCS) if necessary
- Level 2 where the LGD coordinates the response from the COBR e.g. in cases of terrorism
- Level 3 where central government is needed, led by COBR/Civil Contingencies Committee (CCC), the Prime Minister or nominated Secretary of State, or where emergency powers are invoked (Civil Contingencies Secretariat, 2004a).

¹⁴ Home Office <http://www.homeoffice.gov.uk/counter-terrorism/responding-to-an-incident/>

¹⁵ <http://www.homeoffice.gov.uk/counter-terrorism/uk-counter-terrorism-strat/>

¹⁶ <http://www.homeoffice.gov.uk/counter-terrorism/OSCT/>

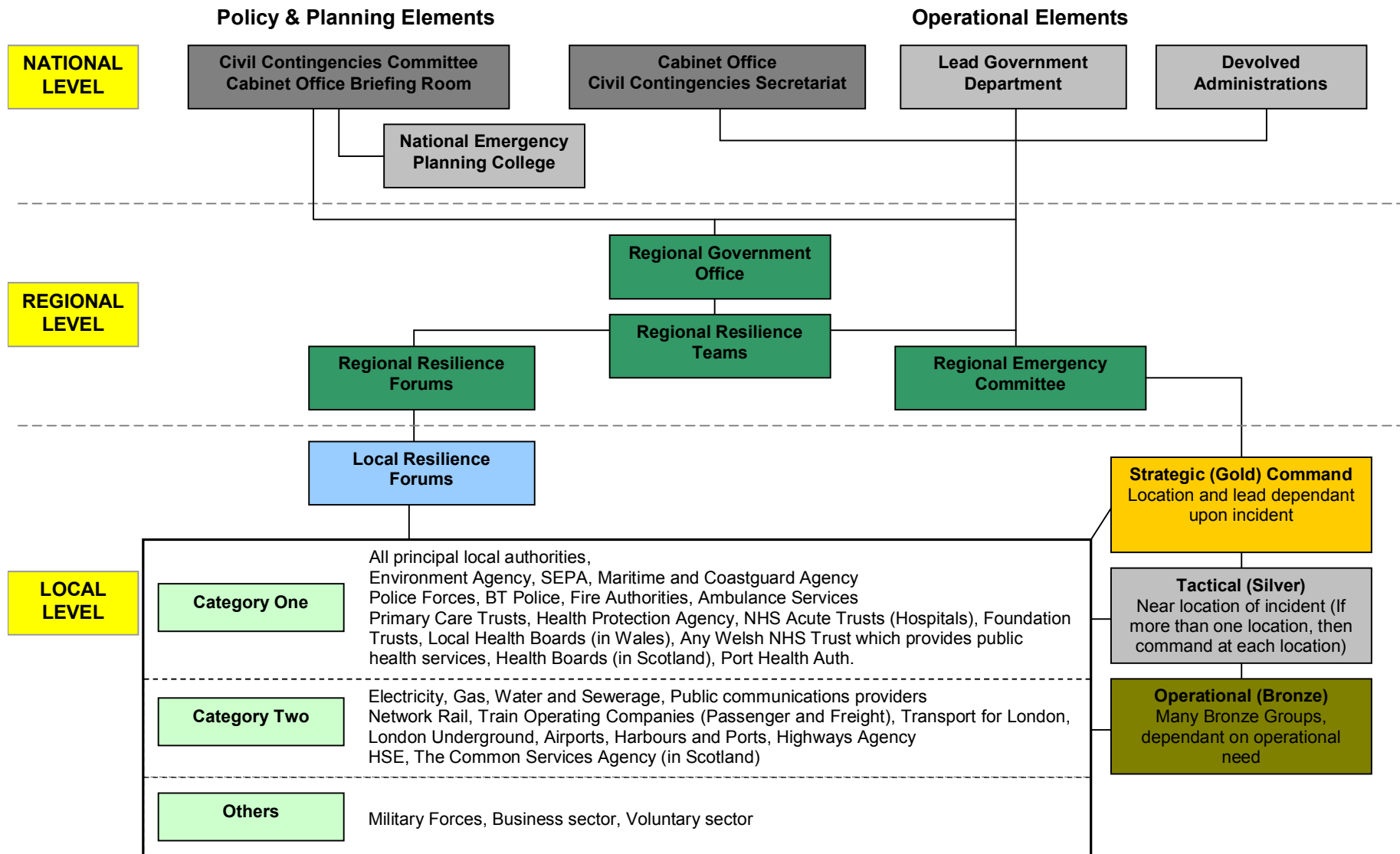


Figure 1: Emergency response arrangements in the UK

Table 1: Lead Government Agencies in the UK for specific hazards

Hazard	Advice on level of threat Local community risk registers plus....	Advice on mitigation solutions/activities
Flood	Environment Agency (England and Wales) Scottish Environmental Protection Agency (Scotland)	Environment Agency (England and Wales) Scottish Environmental Protection Agency (Scotland)
Windstorm	Meteorological Office (on behalf of the Environment Agency)	Department for Communities and Local Government (Building Regulations)
Earthquakes/ landslip/ subsidence	<i>Land movements:</i> British Geological Survey <i>Building collapse:</i> Health & Safety Executive	<i>Land movements:</i> Department for Communities and Local Government (Building Regulations) <i>Building collapse:</i> Fire & Rescue Services and Health & Safety Executive
Extreme temperatures	Meteorological Office	Health Protection Agency
Water scarcity	Meteorological Office (on behalf of the Environment Agency)	Local Water Authority, Health Protection Agency
Terrorist attack	<i>Generic:</i> Home Office <i>Transport:</i> Home Office and British Transport Police (Rail: TRANSEC) <i>Infrastructure:</i> Centre for the Protection of National Infrastructure <i>Crowded Places:</i> National Counter Terrorism Security Office (NaCTSO)	<i>Generic:</i> Home Office <i>Transport:</i> Home Office and British Transport Police (Rail: TRANSEC) <i>Infrastructure:</i> Centre for the Protection of National Infrastructure <i>Crowded Places:</i> National Counter Terrorism Security Office (NaCTSO)
Industrial explosion/ leak	<i>Typically:</i> Health & Safety Executive <i>Pollutant release:</i> Environment Agency and Health & Safety Executive	<i>Typically:</i> Health & Safety Executive <i>Pollutant release:</i> Environment Agency and Health & Safety Executive
Mass transportation accident	<i>Road:</i> Highways Agency and Department for Transport <i>Rail:</i> Department for Transport and Network Rail	<i>Road:</i> Highways Agency and Department for Transport <i>Rail:</i> Network Rail and Rail Safety and Standards Board

If the scale or complexity of an emergency might require central government support or co-ordination, the OSCT liaises with the Cabinet Office and a decision is taken whether to activate central government's crisis management arrangements (COBR). The aim of COBR is to provide effective decision-making and rapid coordination of the central government response. The Prime Minister or other senior minister chairs these meetings, which cover all the strategic aspects of the response and recovery effort, with COBR officials advising on the issues on which ministers need to focus. Within COBR, a senior decision making body (the Strategic Group in terrorist incidents and the Civil Contingencies Secretariat (CCS) for all other emergencies) oversees the Government's response.

A Science Advisory Group for Emergencies (SAGE) may also be formed to provide scientific and technical advice to the LGDs. When a Strategic Co-ordinating Group (SCG) is established and COBR has been activated, the next step is for a Government Liaison Office (GLO) to be despatched. In a non-terrorist emergency, this will normally be performed by the regional Government Offices. In a terrorist emergency, the GLO is a senior Home Office official supported by a multi-disciplinary team (the Government Liaison Team) (HM Government, 2010c).

Efforts to improve this response are on-going. As part of the provision of resilience, stipulated by the National Security Strategy (HM Government, 2010a), the 'Keeping the Country Running' consultation (Civil Contingencies Secretariat, 2011) gathered the views of 'government departments, regulators, industry groups, infrastructure owners and emergency responders' on a draft guide on how to improve the resilience of critical infrastructure and essential services to natural hazards. This consultation only ended in May 2011 so the results are not yet known and will be reported upon as soon as the consultation has been disseminated.

Regional response

The country is divided into nine regions for the purposes of the Regional Resilience Fora (RRF).¹⁷ An example of one of these is the East Midlands Regional Resilience Forum; this covers Local Resilience Fora for Derbyshire, Leicestershire, Lincolnshire, Northamptonshire and Nottinghamshire. Each RRF includes representatives of the local public bodies, emergency services, the Environment Agency, voluntary sector, armed forces and the regional assembly (HM Government, 2004). Members are expected to cooperate both within and outside of the RRF, with information flowing freely between the RRF, LRFs and central government. Regional Resilience Teams (RRTs) in each Government Office are a communications' link between central government and the local level'.¹⁸ Regional Operation Centres can be activated to support a local response and recovery when necessary. In some cases, a Regional Coordinating Group (RegCG) is convened, decided upon by the RRTs or the Lead Government Agency (Table 3.2) in consultation with either the Cabinet Office or the Department for Communities and Local Government. In serious circumstances, a Regional Civil Contingencies Committee (RCCC) is convened to support response and recovery activities across the region. In London, different arrangements apply with the London Specialised Commissioning Group coordinating all relevant responders. The London Resilience Team performs the same functions as other Government Office resilience teams, and would perform the role that would normally be performed by the RegCG or RCCC elsewhere.

Each RRF must produce emergency planning; the aim of this is to improve coordination across regions, and between regional and central and local responses. The Generic Regional Response Plan ensures regional crisis management is in place, including activating the Government Office and the RCCC, and communication procedures with local, regional and national government. The Government Office Business Continuity Plan ensures continuous operation of the Government Office. Regional Capability Co-ordination Plans ensure resources are in place to scale up local plans when necessary (HM Government, 2004). Key informant 1 suggests that from the viewpoint of local responders, the RRF makes an insignificant contribution. It was perceived to have "*interfered*" in the past, especially regarding the fuel crisis in 2000. KI3 also indicated there were too many tiers of

¹⁷ <http://www.cabinetoffice.gov.uk/content/english-regions-emergency-preparedness>

¹⁸ <http://interim.cabinetoffice.gov.uk/ukresilience/response/englishregions.aspx>

control and the RRF did not add anything significant to the effectiveness of the LRF, being largely “*a cup of tea and a biscuit group*”.

Local response

The CCA 2004 stipulates two categories of front line responders and identifies their duties and responsibilities relating to ‘localised incidents through to catastrophic events’ (Civil Contingencies Secretariat 2004:2). Category one or ‘core responders’ are the various emergency services, all principal local authorities, NHS bodies and key government agencies. The category two responders group is made up of ‘co-operating responders’, i.e. utilities, transport organisations, strategic health authorities, the Health and Safety Executive and voluntary agencies. Civil protection arrangements include both categories of responders. A direct product of the CCA 2004 is the duty of these multi agencies to cooperate in a Local Resilience Forum (LRF), based on each police area (HM Government, 2004). This is defined as cooperation in ‘the form of all general category one responders that have functions exercisable in that local resilience area co-operating together in a single forum’ (Great Britain, Parliament, 2005:4(2)b). In Nottingham, a local Emergency Forum had been in existence for 10 years and had carried out a similar role to the LRF. Responders’ full civil protection responsibilities cover the assessment of local risks and the use of this to develop emergency plans, make arrangements for Business Continuity Management (BCM), provide information to warn, inform and advise the public and other local responders, cooperate with local responders to enhance coordination, and advise and assist business and voluntary organizations about BCM. Category two responders have lesser duties of cooperation and information sharing with category one responders.

Specific responses to natural hazards

This section explores specific responses to natural hazards that have been identified during the course of the research.

Response to human disease

The Health Protection Agency (HPA) advises government on public health risks and preventative and control measures, collaborating with international surveillance bodies. The Department of Health has a contingency plan for future SARS outbreaks, involving the HPA’s Centre for Infections which coordinates and manages these efforts. The Foreign and Commonwealth Office also provides information to the public on pandemic influenza and other health advice. The UK Government is collaborating with international partners to prevent, detect and research pandemic influenza (Cabinet Office, 2010a). It is also stockpiling antiviral medication and ensuring that Advanced Supply Agreements are in place to cope with vaccinating the entire population if the need arises. A national framework for responding to an influenza pandemic is also in place which describes the Government's strategic approach to this (Department of Health, 2007).

Response to flooding

The Government has a programme of flood risk management to reduce the likelihood and consequences of flooding (Cabinet Office 2010a). LRFs, the Meteorological Office and flood defence operating authorities have complex systems to monitor and forecast rainfall and floods and can issue alerts. A flood forecasting centre was created by the Meteorological Office and the Environment Agency in direct response to the recommendation of the Pitt review (Pitt, 2008) that these two agencies should work together (ICE 2009). This provides the Floodline Warnings Direct system to

home owners and businesses. This is also provided in Scotland by the Scottish Environment Protection Agency (SEPA).

Response to severe weather

The Meteorological Office is responsible for issuing weather warnings using a traffic light system. The Heat Health Watch system for England and Wales operates in conjunction with the Department of Health and the Welsh Assembly in June to mid-September. This comprises of four levels of response based upon threshold maximum daytime and minimum night-time temperatures¹⁹. For drought, water companies' statutory drought plans trigger actions at various stages to manage supply and demand. Emergency Drought Orders can interrupt supply through stand pipes and rotas, although these have not been exercised since 1976.

Specific responses to major incidents/system failures

This section explores specific responses to major incidents and system failures that have been identified during the course of the research.

Response to major industrial accidents

The Control of Major Accident Hazard (COMAH) and Control of Major Accident Hazard Regulations (Northern Ireland) (HM Government, 2000) mean that major hazard sites are regularly inspected. Emergency responders receive special training to deal with industrial incidents. Where necessary, contractors can be used from a framework established by the Government Decontamination Service (GDS). The GDS provides advice and support to those engaged in decontamination. This 'increases the UK's capacity to resist and recover from deliberate and accidental releases of chemical, biological, radiological and nuclear (CBRN) materials, and from major accidental releases of hazardous materials (HAZMAT).

Specific planning by Government and emergency responders covers:

- *Electricity* - Plans are in place to deal with both national and regional outages. At national level, the aim is to restore supply within three days if there is no damage to the system.
- *Water* - The Security and Emergency Measures (Water and Sewerage Undertakers) Direction (HM Government, 1998) means that water companies in England and Wales have statutory duties relating to emergency planning, and have to provide alternative water supplies, trained personnel and suitable command and control centres.
- *Communications* - Communication Service Providers (CSPs) have to take remedial action in the event of service degradation or failure. In a major incident, the major CSPs work together. A government strategy aims to enhance the resilience of telecommunications.
- *Fuel* - The Government's National Emergency Plan – Fuel (NEP-F) (HM Government, 2008) is enforced in the event of major disruption, to prioritise fuel resources.
- *Marine pollution* - Maritime and Coastguard Agency plans include all emergency responders.
- *Dam inundation* - The Environment Agency (EA) enforces the Reservoirs Act 1975 (HM Government, 1975). The EA mapped the worst credible case potential flood zone for each reservoir. These maps are available to emergency planners, reservoir owners and managers, and

¹⁹ <http://www.metoffice.gov.uk/weather/uk/heathealth/>

local/regional responders to implement the plans. For households, the ‘What’s in your backyard’ website²⁰ allows them to search a flood map of their area. (Cabinet Office, 2010a)

Response to major transport incidents

Local Transport Plans (LTPs) include as a goal to ‘reduce the risk of death, security or injury due to transport accidents’ (DfT, 2009:14). LTPs are planned in consultation with a wide range of stakeholders and the public. The concept of ‘partnership’ has become ‘a core aspect of the work of local authorities, with external partners bringing a range of new skills’ (Department for Transport, 2009:31).

Box 3: Learning points on response to urban hazards and threats

- UK National Security Tasks relate to the prevention and mitigation of threats, through CONTEST, i.e. identification, seeking to prevent involvement of citizens by legislation and conflict resolution, and by working in partnership with appropriate agencies.
- A clearly defined process is activated in an emergency incident. The key responsible players and organisations concerned are dependent on the nature of the incident. Lead Government Departments are clearly defined for each type of event and their role within the gold, silver and bronze command structure as advisors on level of threat or on mitigating solutions. This high level of pre-planned organization is desirable and can provide the most effective response to unexpected incidents.
- Some government agencies have responsibility defined by type of hazard (i.e. recent policy changes mean that in England and Wales the Environment Agency are responsible for dealing with all flooding) while some responsibilities are defined by the type of facility that has been affected (i.e. Network Rail are responsible for railways unless it is a terrorist attack, when the Home Office would take over).
- The recent consultation on how to improve the resilience of critical infrastructure and essential services to natural hazards sought the views of government departments, regulators, industry groups, infrastructure owners and emergency responders. Consultation of key stakeholders is vital to ensure commitment to any guidelines produced.

Specific responses to malicious threats

This section explores specific responses to malicious threats that have been identified during the course of the research.

Response to attacks on crowded places

In 2009, the Home Office released a consultation document, ‘Working Together to Protect Crowded Places – A Consultation Document’ which emerged as a result of the ‘Protect’ strand of CONTEST. As a result of the feedback, they produced a number of documents, each with specific purposes: ‘Working Together to Protect Crowded Places’ (HM Government, 2010) including a crowded places risk assessment matrix, and information exchange between national and local stakeholders; ‘Protecting Crowded Places: The Planning System and Counter-Terrorism’ (HM Government, 2010d) with a focus on counter terrorism, design and planning processes; and ‘Protecting Crowded Places:

²⁰ <http://www.environment-agency.gov.uk/homeandleisure/37793.aspx>

Design and Technical Issues' (HM Government, 2010e), covering typical counter-terrorism design attributes, including the role of architectural liaison officers and crime prevention design advisors.

Response to attacks on infrastructure

It should be remembered that the UK's infrastructure forms an interdependent network. The Institution of Civil Engineers (ICE) (2009) gives the example of a water treatment plant which requires electricity to operate, and an electricity production plant which, in turn, will not work without water supply.

Response to chemical, biological, radiological and nuclear (CBRN) attack

NaCTSO works closely with the Chemical Business Association (CBA) and the Chemical Industries Association (CIA) to raise business awareness of the threat associated with workplace security of chemicals.²¹ NaCTSO is responsible for implementing legislation through the Counter Terrorism Security Advisor Network (CTSAs)²² which advises and supports business. As a result of the anthrax attacks in the US in autumn 2001, the Government introduced legislation intended to enhance the security of certain pathogens and toxins held within the UK. To support the implementation of this legislation CTSAs are trained in laboratory security methods in accordance with NaCTSO and Home Office guidelines.²³ A regulatory scheme exists for radioactive material security, under the Radioactive Substances Act 1993 (HM Government, 1993) under which CTSAs act as site advisers to the EA. The classified document Security Requirements for Radioactive Sources (HM Government, 2006) provides detailed information for radiation and security professionals on the specific security measures that must be applied to sources as part of the regime. It also sets out the more general security requirements for site protection where radiological sources are based. This regime applies to most sealed radioactive sources e.g. those used in universities, hospitals and industrial establishments as well as mobile units designed for off-site use such as radiography and well-logging equipment. The regulations do not apply to some low activity sealed sources or to unsealed sources. It does not extend to nuclear or radioactive sources within military and defence programmes or those materials on licensed civil nuclear sites.²⁴

²¹ <http://www.nactso.gov.uk/AreaOfRisks/Hazardous.aspx>

²² These CTSAs have recently received some stakeholder awareness training from two of the DESURBS partners, namely Lee Boshier and Jon Coaffee, as part of the RADIUS event ran in May 2011.

²³ <http://www.nactso.gov.uk/AreaOfRisks/PathogensToxins.aspx>

²⁴ <http://www.nactso.gov.uk/AreaOfRisks/RadioactiveMaterials.aspx>

Box 4: Learning points on specific responses to urban hazards and threats

- Some hazards are global in nature, having a potential for national impact in the UK, such as outbreaks of SARs and attacks on cyber security. It is important therefore to be aware of global incidents of this sort and to be informed by predicted global trends. In this way, for example, the HPA advises government on public health risks and preventative and control measures, and collaborates with international surveillance bodies.
- National powers can be invoked to mitigate the effects of an incident. This includes natural hazards such as flooding when Emergency Drought Orders can interrupt supply through the use of stand pipes and rotas.
- It is interesting to note that under the CCA 2004, there is a legal obligation for private companies to invest in emergency planning activities that cover publically accessible areas. For instance, private companies such as water companies in England and Wales have statutory duties relating to emergency planning, and have to provide alternative water supplies, trained personnel and suitable command and control centres if an incident occurs.

Response to risks faced by DESURBS thematic areas

This section explores specific responses to the aforementioned thematic areas that have been identified during the course of the research.

Response to transport and transport hub risks

Since the Transport White Paper 1998 (Department for Transport, 1998), there has been a radical change in transport policy towards a more integrated system. The Ten Year Plan 2000 (Department for Transport, 2000) brought together a number of different organisations working in a public private partnership, i.e. the Strategic Rail Authority (SRA), the Rail Regulator, Railtrack plc, and passenger and freight operators. The Government publication *Transport 2010: the 10 Year Plan* (Highways Agency, 2010) outlines the updated partnership between the public and private sectors to provide a high quality integrated transport system. This covers the needs of pedestrians, motorists and public transport users, policies and traffic management schemes to reduce crime and the fear of crime related to transport, and measures to ensure community and road safety.

Regional transport strategies also exist as part of regional planning guidance. They aim to provide a coordinated approach between those involved in transport and land use planning, local planning and the highway authorities (Highways Agency, 2010). The strategies are prepared by the regional planning body and identify transport priorities and strategies for the subsequent five years. They take account of transport operator plans, the SRA and Railtrack (Highways Agency 2010).

The production of local transport plans were the result of the 1998 White Paper. The Strategic Policy Framework for LTPs includes a number of national transport goals which are priorities for local authority consideration, one of which is to contribute to better safety, security and health. Relevant cross network challenges include: reducing the risk of death, security or injury due to transport accidents; reducing the vulnerability of transport networks to terrorist attack; and reducing crime, fear of crime and anti-social behaviour on city and regional transport networks (Department for Transport, 2009). Local transport plans (outside London) integrate complementary local planning and transport and since the Transport Act 2000 are statutory requirements. Maximum use should be

DESURBS Deliverable 2.1: Roles of key stakeholders

made of accessible sites (by public transport, walking and cycling, not just by car). These may be in city centre, edge of centre or out of centre sites which are well served by public transport i.e. sites close to major transport interchanges. Local Authorities (LAs) should work with business, developers, transport operators, users and local residents in making these decisions (Highways Agency, 2010). Development proposals by planners have to submit Transport Assessments where there are significant implications for transport (Highways Agency 2010). Design should take into account road safety, personal security and crime prevention. TRANSEC (Department for Transport (DfT), Transport Security and Contingencies Directorate) is the contact point for security issues and is responsible for developing and enforcing the security standards required of transport operators. Other stakeholders include: The British Transport Police (BTP), local Police forces, the CPNI, LAs, and other operators (Transport Security and Contingent Directorate, 2007).

Land transport security is addressed by NaCTSO²⁵ which works in partnership with other transport agencies to reduce the risk of dangerous loads in the transport sector, in line with the UN ADR regulations (the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (UNADR,2011). Other agencies include: the CPNI, the International Maritime Organisation (IMO), TRANSEC, and the Vehicle and Operator Services Agency (VOSA).

Regional planners have to include the role and future development of airports in the region as part of their regional transport strategy (Department for Communities and Local Government, 2011). Local planning authorities should consider both the growth of regional airports and smaller airports and airfields. Airports are major transport interchanges and generate significant traffic. Airport operators are required to prepare Airport Surface Access Strategies. Airport Transport Fora provide a partnership of airport operators to implement surface transport initiatives to enhance public transport access. TRANSEC (Department for Transport (DfT), Transport Security and Contingencies Directorate) is the contact point for security issues and is responsible for developing and enforcing the security standards required of transport operators. Other stakeholders include: The British Transport Police (BTP), local Police forces, the CPNI, LAs, and other operators (Transport Security and Contingent Directorate, 2007).

The Department for Communities and Local Government (2011) states that LAs should work together with public transport providers and operators to improve public transport and to provide 'a high quality, safe, secure and reliable network of routes, with good interchanges, which matches the pattern of travel demand in order to maximise the potential usage of public transport' (pt71). Transport hubs can be target areas for pick pockets and snatch thieves (Department for Business Innovation and Skills, 2010). The Department for Communities and Local Government (2011) states that LAs should create more 'direct, safe and secure walking routes' (pt75) including around city centres to reduce walking distance between land usage and to public transport, and to address personal safety concerns of pedestrians. LAs have to provide a cycling strategy as part of their local transport plan (Department for Communities and Local Government 2011, pt77) which promotes cycling and provide safe and secure routes and parking. Transport interchanges should be safe and convenient to use (Highways Agency, 2010) to maximise the walking and cycling potential for public transport services (pt48).

The Secretary of State for the DfT enforces railway security standards and regulates protective counter-terrorist security on the rail network, the London Underground, the Docklands Light Railway

²⁵ <http://www.nactso.gov.uk/AreaOfRisks/Land.aspx>

and the Glasgow Subway. The Secure Stations Scheme²⁶ was launched in 1998 and is about improving security of all rail and underground networks which are policed by the British Transport Police (BTP). It is an incentive to station operators to improve security and provide reassurance to passengers and staff. It establishes standards of good practice and accredits individual stations which have worked with the BTP and other local partners to implement security measures. It is measured on both design and management practice criteria. It also encourages working together with other organizations to improve the whole journey of railway users, including their walking routes to the station. Since the Madrid bombings in 2004 and the growing potential terrorist threat to the wider rail network, the DfT has worked together with the other seven light rail networks on best practice security regimes. The Transport Security and Contingent Directorate (2007) offers security guidance to operators relating to depots, stops and stations, rolling stock and infrastructure as well as generic personnel security. The open nature of the stops presents greater challenges than other transport models. Transport Security and Contingent Directorate (2007) provides guidance on various security aspects for light railway including at stations and stops, of rolling stock, depot security, and response to suspicious articles and behaviour.

Response to shopping centre risks

At the planning level, the Planning Policy Statement 6: Planning for town centres (Office of the Deputy Prime Minister, 2005) applies to all main town centres which cover retail and entertainment areas (including sport and recreation use). Regional Spatial Strategies and local development plans should encompass the objectives of positive planning for town centre growth and development. Local planning authorities should then work together with stakeholders (including the development industry) and the community to assess the needs for new space, and the capacity of existing centres. The Planning Policy Statement suggests considering factors such as the positive and negative impacts of a development, its accessibility and impact on congestion, employment opportunities, local service provision, and residents' views. Also included in the vitality and viability health check list is the 'perception of safety and occurrence of crime'. In terms of design, crime prevention design officers can advise on environments to minimise the risk of violent crime. Responsibility for ensuring that these measures are taken involves a wide range of stakeholders. These include relevant government departments and initiatives, the emergency services, LAs, private sector security providers, and many nationwide NGOs representing the retail community such as the British Council of Shopping Centres (BCSC). However, at the shopping centre level, the responsibility for shopping security plans (required since 1966) and contingency planning lies with the centre management.

Businesses are encouraged to work in partnership with each other and with other agencies, to tackle crime. For example, partnerships to prevent violence and aggression in licensed and retail premises (HSE, n/d) are encouraged between businesses, the police and crime prevention officers (for intelligence sharing and law enforcement), LAs (to tap into local crime reduction strategies), unions (to identify violence issues), and other local businesses (to improve communication and warn of potential violence) (HSE, n/d). Other organizations exist to support measures to make shopping centres crime free. For example, the Association of Business Crime Partnerships (ABCP)²⁷ works with business crime reduction partnerships (BCRPs), police, local authorities and other agencies to help businesses reduce the impact and cost of crime against them, their staff and the communities they

²⁶ <http://www.dft.gov.uk/pgr/crime/sss/ssc-accreditedstations.pdf>

²⁷ <http://www.businesscrime.org.uk/>

trade in. Many local Business Against Crime and Crime Reduction Partnership groups are part of this, together with shopping centre members. This is now recognised as a valuable source of information on practical steps to identify offenders and anti-social elements and to work together to manage their behaviour more effectively. In addition, the City Security and Resilience Network (CSARN) is a not for profit network and advisory service involving both the public and private sectors. It produces a twice monthly Security Risk Monitor for the business community in the UK and Ireland (CSARN, 2011) that covers threats from terrorism, political violence, extremism, cyber-attacks and crime.

Terrorism is a real threat to shopping centre locations. Terrorism risk management is the responsibility of the shopping centre management as part of their contingency planning. The National Counter Terrorism Security Office (NaCTSO) on behalf of the **Association of Chief Police Officers** Terrorism and Allied Matters (ACPO (TAM)) works with the Security Service to reduce the impact of terrorism in the UK (NaCTSO, 2006). NaCTSO coordinates a national network of specialist police advisors (CTSAs) to provide protective security guidance to those who operate, manage or work in shopping centres to reduce the risk of terrorist attack and to limit the effects of any attack. This covers security measures, responses to threats and the discovery of suspicious items and events, search and evacuation plans, business continuity plans, and communications and media plans. For high profile events, the Police Gold Commander may appoint a Security Coordinator (SECCO) and Police Search Advisor (POLSA). The SECCO advises on planning and implementation of security at such events, reporting to the Gold Commander. The POLSA carries out an assessment of the venue, in the light of the current security situation; their report is then submitted through the SECCO to the Gold Commander. They liaise with shopping centre management and other involved stakeholders and seek advice from the CTSA and a POLSA Police Search Advisor who assesses the venue and the event. A report from the POLSA is submitted via the SECCO to the Gold Commander. Appropriate actions can then be implemented at all levels.

Response to sporting venue risks

Issues of crime reduction and taking part in sport without fear of crime are a concern (Sport England, 2005). The Department for Communities and Local Government (2002a) specifically identifies only 'security and personal safety, especially for children' (point 20vii) as issues relating to security. However, more serious security issues are also part of planning and development, including the threat from terrorism (NaCTSO, 2006). It is the responsibility of LAs to carry out existing and future needs assessment and audits of open space, and sports and recreational facilities (Department for Communities and Local Government 2002). The principle is that local standards should be set locally and these include: whether new provision is needed; the need for enhancing existing facilities; and accessibility in terms of distance and cost. For sports stadia, the owner or lessee has responsibility for the provision of risk assessments and planning, and also to seek advice on such matters (NaCTSO, 2006). For specific stadia, the Stadium Safety Office or Designated Person is responsible for producing a security plan, and all associated security measures. They should be involved in the planning and design of exterior security and access control, and in all new building and renovation work, liaising with the police, emergency services and LAs. NaCTSO (2006) advises on aspects of the risk management cycle through CTSAs, available through the local police service. NaCTSO (2006) gives specific direction on risk identification, planning, physical security, search planning, and specific terrorist threats such as vehicle borne improvised explosive devices (VBIEDs), CBRN attacks, suicide attacks and others.

Box 5: Learning points on DESURBS themes

- Emergency response and recovery in the UK is founded on an approach in which operations and decisions are made at the lowest appropriate level. This is demonstrated by the case of shopping centres. Responsibility for crime prevention and security against terrorism in shopping centres lies with the centre management which has responsibility for shopping security plans and contingency planning. At a broader level, this is supported by national level initiatives.
- Ensuring that shopping centre design takes into account crime prevention and security measures involves a wide range of stakeholders. These include relevant government departments and initiatives, the emergency services, LAs, private sector security providers, and many nationwide NGOs representing the retail community such as the British Council of Shopping Centres (BCSC).
- In sporting venues, the principle is that local standards should be set locally and these include: whether new provision is needed; the need for enhancing existing facilities; and accessibility in terms of distance and cost. For sports stadia, the owner or lessee has responsibility for the provision of risk assessments and planning, and also to seek advice on such matters.
- For the Olympic Games 2012 an Audit and Review suggested that planning and spending should continue to be intelligence-led and to use a risk-based approach, demonstrating the serious potential for attack. Responsibility for safety and security again is that of the Olympic and Paralympic event's organisers. However, many multi-agencies are involved in this (the police, fire and ambulance services, the UK Border Agency, the Olympic Delivery Authority and the London Organising Committee of the Olympic Games and Paralympic Games).
- In the last 20 years there has been a move to a much more integrated transport system. TRANSEC is the contact point for security issues and is responsible for developing and enforcing the security standards required across all transport operators, from pedestrian to air transport. All major stakeholders are involved in security guidance.

Appendix 4: Jerusalem stakeholders' interviews (sample)

Bezalel end-users interviews

In order to develop a valid ISR framework, a comprehensive investigation of current workflow was implemented. Partner 8 received from the various stakeholders matrices, which described generic urban planning phases existing in related organizations. Since planning for different purposes might result in different workflows, Partner 8 devised three different planning scenarios and identified end-users which might be involved in all three scenarios. Some end-users were more responsive than others, and our efforts have resulted in five interviewees. Each interviewee filled out the end-users participation according to their knowledge regarding these three planning scenarios:

1. Planning a venue for large scale public gathering- including retrofitting public venues. This scenario represents the planning effort to comply with crowd control procedures as decided by different organizations- e.g. police, municipality and general operation of such venues.
2. Terror oriented planning for a light rail station – in a city such as Jerusalem which suffered many terror attacks against public transportation, there is great importance in including terror prevention planning in these systems. This scenario was chosen in order to identify which end-users are included in the planning procedure thus sharing their experience and knowledge from prior incidents in planning the new light rail in Jerusalem.
3. Earth quake oriented planning in the Old City of Jerusalem- this scenario was suggested in order to identify any outstanding planning procedures specifically designated to deal with cultural and historical heritage compounds.

The interviewees marked X for end-users who participate in a certain planning phase as part of protocol, V for those who should participate in the planning phase and O for those who participate- but shouldn't be involved.

The marks V, O state the interviewee's opinion only and do not indicate formal planning procedure. In the attached Excel sheet there is a work sheet for every scenario an end-user answered, and at the top of the page the RIBA stages are mentioned.

The main conclusion is that there is a wide gap in the agreement as to the perceptions of responsibilities of each stakeholder. The simplest and current thinking still focuses on individual units taking over responsibility during the incident and in the recovery time. However, a greater integration at the time of preparation is likely to give added value to the urban resilience and the reactions during incidents. Responsibilities are defined geographically as well as administratively. The divisions between the stakeholders are more apparent when the snow emergency areas and routes or the police area boundaries, or the neighbourhood council boundaries, or the transportation boundaries or earthquake sensitivity zones are superimposed. The inconsistencies are highlighted and these mapping exercises can contribute to a more coordinated effort in managing the city in time of preparation as well as during the incident and in the recovery period.

Marta Kowalska

אילו בעלי עניין צריכים להיות מעורבים בשלבים המפורטים בטבלה
 (האילו שיהיו אצלה)
 מהי המידע שהיא צריכה לראות?
 מהי המידע שהיא צריכה לתת?

(1) יש להתייחס לרשימת בעלי העניין ומעורבותם באירוע המוצג בראש הדף. ניתן להוסיף בעלי עניין נוספים בסוף הרשימה.
 (2) אנא סמל/ X כאשר יש מעורבות של אותו בעל עניין ברמת אילו בעל עניין וברמת אילו.

בעלי עניין	Pre-Planning phase				Pre-Construction phase			Construction phase			Post-Completion phase			
	החלטות (תכנון, תכנון מקדים)	התכנון (תכנון, תכנון)	אמצעים (למשל)	אמצעים (למשל)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)	תכנון (תכנון, תכנון)
אגף חירום ובטיחות														
ועדה מקצועית לתכנון ובטיחות														
אגף שיפור פני עיר (שפי"ע)														
אגף תחבורה														
אגף תכנון עיר														
מנהל/ים העיר														
אגף איכות הסביבה														
אגף רישוי														
שירותי נכסות וחלוצה עירונית														
משטרה														
תכנון אב לתחבורה														
שירותי בריאות וחגיגות														
מנהל/ים קהילתיים														
אגף ספורט														
רשות עירונית לתעסוקה														
אגף תע"ר														
פיקוח מהנדסים העיר														
אגף תעשיית														
ת"א (מנהל/ים) אב"ב														

Notes: It might be of use to consider one or two possible scenarios while deciding on who the key stakeholders should be. For example, **Development of mixed residential and commercial use in a flood prone area** – residential, business, industrial and associated infrastructure. **Sports stadium** – including associated infrastructure [prone to natural hazards, crime and terrorist attacks]

Handwritten notes in Hebrew:
 - "מהי המידע שהיא צריכה לתת?"
 - "מהי המידע שהיא צריכה לראות?"
 - "אילו בעלי עניין צריכים להיות מעורבים בשלבים המפורטים בטבלה"
 - "האילו שיהיו אצלה"
 - "מהי המידע שהיא צריכה לתת?"
 - "מהי המידע שהיא צריכה לראות?"

Figure 1: Example of the interview sheet

DESURBS Deliverable 2.1: Roles of key stakeholders

planning for earthquakes		pre planning					pre-construction					construction				post construction						
stake holder involvement	name	position	Pre-agreement	Appraisal	Strategic briefing	n/a	Technical design	Outline proposals	Scheme design (detailed proposals)	Detail design (Final proposals)	Production information	Tender documentation	Tender action	Project planning (mobilisation)	Construction to practical completion	cost, procurement and quality	practical completion	Evaluation	Operation	Maintenance	Change of use	
	Moti Bodek	Architect	Pre-Project phases						Pre-Construction phases					Construction phases			Post-Completion phase					
		RIBA phases (2007)	n/a	Appraisal	Design Brief	Concept	Design development/ Technical design	acquiring building permit	Outline proposals	n/a	n/a	Production information	Tender documentation	Tender action	Project planning (mobilisation)	Construction to practical completion	Monitor cost, procurement and quality	Post practical completion	Evaluation	Operation	Maintenance	Change of use
existing stakeholders:																						
	emergency & risk management department in local government																					
	local planning commission		o	o	o	o																
	urban improvement department																					
	sanitation department																					
	city planning department		o	o	o	o	o															
	city engineer		o	o	o	o	o															
	environmental protection department																					
	licensing department				o																	
	fire fighters																					
	police																					
	transportation master plan																					
	social health services																					
	community council																					
	chamber of commerce																					
	municipal employment authority																					
	city architect																					
	city engineer forum																					
	infrastructures department						o															
	home front command		o	o	o	o	o															
	army																					
	stakeholders suggested by the interviewee:																					
	israel land administration				o																	
	paramedic services																					
	supervision department																					

Figure 2: Example of the data analysis spread sheet

Appendix 5: Multi-agency cooperation for urban resilience in Nottingham and Nottinghamshire

By Julie Fisher, November 2011

Table of Contents

1.0 Introduction	5
2.0 The Civil Contingencies Act 2004.....	6
2.1 Emergency planning prior to the act	6
2.2 The impact of the Civil Contingencies Act.....	6
2.3 Links between local LRF processes and the Civil Contingencies Act.....	7
2.4 Areas for improvement relating to the Civil Contingencies Act	8
2.4.1 Legal status	8
2.4.2 Risk assessment issues	8
2.4.3 Interoperability	8
2.4.4 Funding.....	9
2.4.5 The fear factor	9
3.0 Nottingham Local Resilience Forum multi agency coordination.....	9
3.1 Agency roles and responsibilities	9
3.1.1 Nottinghamshire Police	9
3.1.2 Nottinghamshire Fire and Rescue Service.....	10
3.1.3 East Midlands Ambulance Service	10
3.1.4 Health Protection Agency East Midlands Regional Office.....	10
3.1.5 Nottinghamshire Mental Health Trust	11
3.1.6 Nottinghamshire Primary Care Trust	11
3.1.7 Nottingham University Hospitals NHS Trust.....	11
3.1.8 The Environment Agency	12
3.1.9 Nottingham City Council.....	13
3.1.10 St John Ambulance	13
4.0 How effective is the Nottingham and Nottinghamshire LRF?.....	13
4.1 Organisational aspects of the LRF.....	13
4.1.1 Governance.....	13
4.1.2 Organisational structure.....	13

DESURBS Deliverable 2.1: Roles of key stakeholders

4.1.3 Relationships.....	14
4.2 What does the LRF do well?	14
4.2.1 Risk assessment	14
4.2.2 Emergency multi-agency response	15
4.2.3 Recovery	16
4.2.4 Input into urban design	16
4.2.5 Business Continuity	18
4.2.6 Communicating with the public.....	19
4.2.7 Evacuation and rest centres	21
4.2.8 CBRN and decontamination	21
4.2.9 Training and exercise	22
4.2.10 Community resilience.....	24
4.2.11 Debriefing	25
4.2.12 The role of the Voluntary Services	25
5.0 How could the Nottingham and Nottinghamshire LRF be more effective?.....	26
5.1 Speed of process.....	26
5.2 Strategic sign up	27
5.3 Mainstreaming resilience	27
5.4 Localism.....	27
5.5 Siloed working	28
5.6 Inter agency communications	28
5.7 Use of tools and hardware	28
5.8 Funding issues	30
6.0 Examples of multi agency responses to incidents.....	31
6.1 Nottingham city riots (July 2011).....	31
6.2 Fear of influenza pandemic (2009)	32
6.3 Severe cold weather (2009 and 2010)	32
6.4 Flooding.....	33
6.5 Fires.....	33
6.5.1 Tyre fire at Warsop (May 2009).....	33
6.5.2 Fire at JAYPlas, Loughborough (May 2011)	33
6.5.3 School fire, Mansfield (April 2011).....	33
6.6 Nottingham Goose Fair	34
6.7 Terrorist related incidents.....	34

DESURBS Deliverable 2.1: Roles of key stakeholders

6.7.1 White powder incidents	35
7.0 Conclusions and key messages.....	35
Appendix 1	38
Appendix 2.....	40

1.0 Introduction

The East Midlands region has five Local Resilience Forums (LRFs). These are Nottingham and Nottinghamshire, Derbyshire, Lincolnshire, Leicestershire and Rutland, and Northamptonshire. Some agencies who took part in this consultation contribute to the activities of more than one LRF; for example, EMAS and the HPA cover all of the above counties. However, the focus here is confined to the specific operations of the Nottingham and Nottinghamshire LRF.

This report is based on semi-structured interviews with eleven key informants who are engaged with emergency planning and resilience in Nottingham and Nottinghamshire. Where possible, direct quotes by them are used to demonstrate the points made. These respondents are cited by number for example, key informant one is K1 (and their details included in Appendix 1 of the deliverable 2.1c). The list of questions on which these interviews were based is included in Appendix 1 of this document. This report makes frequent reference to the DESURBS Working paper 'L01' (Fisher and Boshier, 2011) which provides more general definitions and context for issues raised here.

Informants were from organisations that are all members of the Nottingham & Nottinghamshire Local Resilience Forum (LRF). They include representatives of the conventional 'blue light' services, i.e. Nottinghamshire Police, Nottinghamshire Fire and Rescue Service and the East Midlands Ambulance Service. In addition, representatives from various health sector agencies were interviewed (Nottingham University Hospitals NHS Trust, Nottinghamshire Primary Care Trust (PCT), Nottinghamshire Mental Health Trust (MHT) and the Health Protection Agency East Midlands Regional Office (HPA)). Finally, representatives from Nottingham City Council, the Environment Agency (EA) and St John Ambulance (SJA) were interviewed. All of these are category one²⁸ responders, apart from the Nottinghamshire Mental Health Trust, and St John Ambulance. St John Ambulance is classed as an 'other responder'. The Nottinghamshire Mental Health Trust is not listed on the Nottingham and Nottinghamshire LRF website.²⁹ Their status is clarified by K4 from the PCT:

"The Mental Health Trust currently aren't categorised but we couldn't in certain emergencies deliver the response without their support because obviously the psychological impact on the general public would mean that we would need the support of the MHTs".

The respondents were found mainly due to snowball sampling as each one was asked to suggest others who might be willing to engage with the project. The names put forward were very quickly duplicated and this confirmed that the correct people were being consulted. Several LRF agencies have not been interviewed due to constraints on time and availability of both researcher and respondents.

²⁸ See Fisher and Boshier, 2011:5.3

²⁹ <http://www.nottinghamcity.gov.uk/prepared/index.aspx?articleid=6520>

2.0 The Civil Contingencies Act 2004³⁰

2.1 Emergency planning prior to the act

Several respondents had experience of emergency planning and multi-agency cooperation before the enforcement of the Civil Contingencies Act (CCA) in 2004. The civil protection legislation that existed at this time dated back to 1918 and was mostly aimed at wartime planning [K10].

In Nottingham and Nottinghamshire, there was a level of coordination between key agencies already in place in the form of the Emergency Planning Liaison Group (EPLG) [K9]. This partnership working was at a lower level than is enshrined in the CCA, for example:

“Prior to the act, to read LRF you read police force area, so typically if you’re talking about security and responding to emergencies in general, typically the police, and typically there was a little group, police, fire, ambulance, and a couple of other players they would have worked with locally, so if you were Lincolnshire you would have had the coast guard” (K9).

The degree to which good relationships are seen to have been already in place prior to the act, however, varies between respondents. Some have a very positive view of this [K1, K4 and K9]. K7 also states “we always had some sort of inter agency liaison but predominantly centred on the emergency services”. Others suggest a more negative picture as “everybody used to run around like headless chickens” [K6] and that before the CCA, “there was no regulation about the cycle that you had to do, the type of groups that had to work or set up to respond to different types of things or to do your planning” (K10).

Respondents describe how from the 1980s onwards, various key events and incidents acted as the catalyst to the implementation of the act in 2004 as it became apparent that legislation did not provide a sufficient level of peace time response. The year 2000 was the year of the ‘3 F’s’ [K10]: fuel shortages in September; severe flooding in November; and foot and mouth disease in December/January. The 9/11 bombings in 2001 consolidated these concerns into a move towards legislation.

2.2 The impact of the Civil Contingencies Act

The CCA served to formalise whatever ad hoc arrangements existed beforehand and to provide regulation on risk assessments, emergency planning, information sharing and categorisation of category one and two responders. More agencies were included in “a mature collaborative approach” [K9] and the involvement of “the higher level group” was also required [K10].

Respondents are predominantly positive about the impact and overall effectiveness of the CCA. K7 emphasises the pre-planning requirements of the act: “so we’re actually getting in before something happens.” In terms of partnerships, K7 has a greater understanding of how other agencies work and what they need and can contribute as a result of the act. This has huge benefits as “when we attend incidents, we know what we can expect from them and they know what they can expect from us”.

K6 sees the benefits as focusing on the capabilities of organisations:

³⁰ See Fisher and Boshier, 2011: 5.1

“I won’t say it’s made us less vulnerable but it’s certainly made people more aware of their own vulnerabilities and their organisations and has given a will to plan and prepare for those eventualities”.

Agencies responded to the requirements of the CCA at different rates. In the case of the EA, even though their predecessor until 1996, the National Rivers Authority, was heavily involved in incident response, the structure of the CCA around police force boundaries was different to EA areas, and as a national organisation, they were slow therefore to realise the implications of the act [K8]. K8 states that the CCA impacts mainly at a local level within the EA, rather than at national and regional levels, as theirs is mainly a coordination role. He describes the publication *Expectations and Indicators of Good Practice Set for Category 1 and 2 Responders* (Cabinet Office, 2009) as “our Bible” as it tells you in very clear terms what is mandatory.

2.3 Links between local LRF processes and the Civil Contingencies Act

Each year the Cabinet Office produces the National Risk Assessment³¹. This is a restricted document which lists about 40 hazards and threats; there is also a version containing just the hazards which is available to the responding communities (K9). The LRF then identifies specific pieces of work which arise out of this central government guidance.

K9 chairs the Risk Advisory Group of the Nottingham and Nottinghamshire LRF and explains the process:

“It (NRA) gives us our RA methodology, how that fits into the national plan that filters down. There’s a National Risk Register which the public has access to and that informs the Community Risk Register. So we take the secret information and it’s distilled one way by the government and distilled another way by us so you end up with a local context for local people. So that gives you the methodology. It tells us what we can and can’t do about scoring because the government have an opinion about how risky a thing is or isn’t”.

K9 produces: “a little top ten to the resilience working group of the risks and what additional control measures we think are needed”. The sub groups are aligned to these work streams and ensure that “we take that guidance and we put it into local context” (K9).

Recently, the restricted version of the NRA has been made more accessible to police forces and has therefore been shared in a controlled environment with the Risk Advisory Group (K9). As result, the areas associated with terrorist risk, such as CBRN, attacks on infrastructure, crowded places and transport have been contextualised locally alongside the natural hazards.

For each perceived local risk, a plan is devised if it does not already exist. The Resilience Working Group of the LRF distributes the work required to the appropriate Task and Finish Group. The risk assessment is then reviewed annually by the agencies responsible for that particular area, for example, the Fire and Rescue Service is responsible for industrial hazards and explosions (K7). Part of this is to take into account the likelihood of a particular incident occurring. Key informant 7 points out that this is “based on intelligence and information received, if it is less likely to happen now than it was, then that will change the weighting and the way it’s placed in the order of things”.

³¹ Fisher and Boshier, 2011: 4.1

Some sub groups sit several times a year and are well established. Other groups are created or re-formed in response to certain tasks that arise. Once the plan or review is completed “it then goes back to the resilience group and then goes back to the LRF to be signed off. So there’s a structure and process in place” (K10).

2.4 Areas for improvement relating to the Civil Contingencies Act

Certain areas were identified by respondents as being ones for improvement.

2.4.1 Legal status

Although the CCA has legal status and sets down statutory duties for agencies to work together, K9 explains that it is; “not prescriptive in the true sense of the word but the Cabinet office are quite careful to say if you don’t do it like this, then not that it would be frowned upon, but come the day in court, they say well these are the regulations, why did you chose to do it in a different way?” For this reason, there is no single way of working across the various LRFs, although ultimately certain duties must be carried out.

The fact that the duties enshrined in it are not mandatory is seen by K1 to be a fundamental weakness:

“If someone suddenly said no we’re not playing ball, then how do you get them to play? That could be an issue but up until now, that hasn’t happened and I don’t think with the current people who are in charge of all the various agencies that will happen.”

This is a particular concern for him given the fact that teams are shrinking due to current austerity measures.

2.4.2 Risk assessment issues

Central government sets the issues that the LRF needs to focus on, through the National Risk Register. These are not always seen to be of relevance locally. For instance, K1 does not see the need for reservoir failure plans as:

“There hasn’t been a reservoir failure in this country since 1928. Whether you think that’s legitimate or not we have to plan for it. I think it is a complete waste of time in Nottingham.”

K8 agrees that consequently some of the sub groups are not as productive as they should be:

“Perhaps the risk assessment process could be integrated better into setting the priorities for the LRF. I mean what I think the best way is if you look at your risk assessments and they give you a ranking of which ones are most important ones. Then you look at say your top ten and you say, right we’re going to focus on the plans to mitigate those risks first and then we’ll move down and as we’ve done those, they will move down and other ones will take their place... there’s not a lot of superfluous work because people wouldn’t stand for it but it would be nice if it was just a clear written down structure. That would be the only thing I’d perhaps push towards”.

2.4.3 Interoperability

Although K7 is generally positive about the CCA, he feels that the government push towards ‘interoperability’ could go further over the next 10 years, as the integration of procedures by

agencies at a single major incident is critical to avoiding any resistance between those agencies. This could be improved by:

“Identifying specific incidents that are likely to be involving from a larger scale multi agency perspective and making sure that the way the police and ambulance service and fire service work at the scene fits”.

2.4.4 Funding

The CCA resulted in extra funding being made available by the Home Office. For example, New Dimension was the first Fire Resilience project to be implemented and provided a wide range of equipment and vehicles to help deal with major challenges like floods and terrorist attacks. However, K9 describes “a really big mistake” as the lack of demand at the time from the police on these funds:

“ACPO³² at the time said, oh we don’t need anything. We’re doing all this anyway because of our previous emergency planning liaison groups, we’ll just change the badge and there we are. But actually what it needed was some money behind it to pay for all this administration. Because this falls on partner agencies, typically it’s either the police of the LA.”

Also the fact that the LRF has no legal entity and therefore no budget is a limiting factor:

“So they usually say the costs are picked up where they fall so an exercise in September and health will have some expenditure because they’re providing the premises we’re training on. The rest of us won’t pick that up; they’ll pick it up. The rest of us will supply our own staff but they’ll pick up the expenses from that” (K1).

2.4.5 The fear factor

A singular view is expressed by K1 on the CCA as a “knee jerk reaction from the government to let’s have loads and loads of counter terrorist security advisors”. The perceived effect of this is that this spread a counterproductive fear of a terrorist threat amongst businesses which had not previously been targeted by NaCTSO³³. This is attributed to a fundamental lack of partnerships and collaborative working by the relevant agencies.

3.0 Nottingham Local Resilience Forum multi agency coordination

3.1 Agency roles and responsibilities

3.1.1 Nottinghamshire Police

Nottinghamshire Police is the territorial police force responsible for policing the county of Nottinghamshire and the unitary authority of Nottingham in the East Midlands. Local policing in Nottinghamshire is divided into four geographical areas, known as divisions, which cover one or more local authority areas. Each of the four divisions is, in turn, divided into a number of Neighbourhood Policing Areas (NPAs).

³² Fisher and Boshier, 2011: 5.7.2

³³ Fisher and Boshier, 2011: Table 1

Nottinghamshire Police is the chair of the full LRF. It is also the chair of the Risk Advisory Group and K9 is the Secretariat of this. The police are often the lead agency coordinating a response to an incident as other agencies are not seen to have the resources to do this (K9). They are represented on most of the sub groups of the LRF.

3.1.2 Nottinghamshire Fire and Rescue Service

The Nottinghamshire Fire and Rescue Service provide emergency response to incidents ranging from simple bin or grass fires to major incidents (K7). This encompasses: “dealing with road traffic collisions, wide scale flooding, local flooding; we tend to have the full range of incidents, special service calls including multi agency incidents” (K7). It is responsible for a number of risk assessments, including industrial hazards and explosions.

In the LRF, the Nottinghamshire Fire and Rescue Service chairs some of the key capability groups including the CRBN group and the training sub group.

3.1.3 East Midlands Ambulance Service

EMAS covers five counties. In addition to crews who deal with routine emergencies, EMAS has Hazardous Area Response Teams (HART) based at Mansfield, which would respond to incidents such as fire arms, water rescue, rescue and treatment at height, CBRN and public disorder. These teams are trained to operate using personal protective equipment that allows them to access situations that other EMAS staff could not. In addition, there is a Special Operation Response Team (SORT), which is trained in decontamination following an incident.

The EMAS Emergency Preparedness Manager sits on a range of LRF groups including site management, flooding, and events planning amongst others.

3.1.4 Health Protection Agency East Midlands Regional Office

The HPA works across five LRFs as a clinical specialist. Its remit includes responding to communicable disease outbreaks, water borne disease, and outbreaks of food poisoning. They also advise on chronic chemical issues, and provide specialist support relating to fires, mass radiation incidents and environmental toxicology. They are part of the consultation process for planning of industrial processes with the EA.

Key Informant 6 acknowledges the difference between this role and that of the emergency services:

“Clearly we operate in a different way from particularly the blue light services. Most people associate responding to emergencies with a blue light running across the road. We don’t have anybody with a blue light who will dash down to anywhere but we have our remote systems and networks set up to support those things. And provide advice to those front line ones where that’s appropriate and needed”.

Within the Nottingham and Nottinghamshire LRF, the HPA is mainly involved in the Resilience Working Group, plus telecommunications, health, CBRN, and training sub groups. As a category one responder, the HPA is “collectively responsible for working with our health protection units to ensure that they fulfil the statutory requirements in terms of training, exercising, we work closely with a large number of stakeholders because obviously the region covers five LRFs” (K5).

3.1.5 Nottinghamshire Mental Health Trust

Key Informant 6 is the dedicated Head of Resilience for the Trust. Her remit is broad and includes emergency planning and preparedness, policies and procedures for evacuation, mass casualties, and severe weather. She is currently seconded as regional coordinator for the Strategic Health Authority to the PREVENT³⁴ initiative of the counter terrorism CONTEST strategy:

“to make sure that this agenda is picked up by all the trusts, be they PCTs, acute, mental health, GPs, ambulance, the whole of health for the region”.

This brings with it particular responsibility for violent extremism and radicalisation i.e.

“Identifying vulnerable people who could be at risk of being radicalised, be they members of staff or patients who then could potentially become a terrorist and plant the bomb or send the substance in the post”.

This covers the development of shooter protocols, and a focus on chemical suicide. In a major incident, the MHT would be involved in providing psychological support in the aftermath:

“those that are dead are dead, their relatives need some support, friends, people who’ve heard about it and it’s reminded them of something that they were involved in and so it goes out” (K6).

This can be a very long terms process, as the crisis support team are still assisting those affected by the Hillsborough incident in 1989.

As previously stated, the MHT are not a recognised responding agency in the LRF. However, K6 from the MHT comments:

“We aren’t actually identified as a category one responder, we’re not identified as a category two, in fact we’re not identified anywhere but because we are part of the NHS, we have premises, nurses, clinicians, we act as if we are a category one responder”.

3.1.6 Nottinghamshire Primary Care Trust

The aim of the Nottinghamshire Primary Care Trust is to improve the health and well-being of people in Nottinghamshire. Within the LRF, it is responsible for the pandemic flu risk assessment. It also collaborates on other parts of the risk assessment process, such as the flooding risk assessment, which is the actual responsibility of the EA, with the PCT looking at the health impacts of it. Currently there are pandemic flu plans for Nottingham city, Nottinghamshire and Bassetlaw, as well as a multi-agency pandemic flu plan encompassing the responses from all the responding agencies. K4 explains:

“This is a strategic document, it doesn’t give you line by line instructions as to what an organisations will do but it demonstrates how we will collaboratively work together in response to a pandemic”.

3.1.7 Nottingham University Hospitals NHS Trust

Formed in 2006, the Nottingham University Hospitals NHS Trust is now one of the biggest and busiest acute Trusts in England, employing 13,000 staff. It provides services to over 2.5 million

³⁴ Fisher and Boshier, 2011: 5.1.2

residents of Nottingham and its surrounding communities and specialist services to a further 3-4 million people from neighbouring counties each year. The Trust is made up of Queen's Medical Centre, Nottingham City Hospital and Ropewalk House³⁵.

Key Informant 3 is responsible for writing the internally facing response plans within the Trust. These might relate to flooding, flu, loss of power, ICT issues, setting out how the Trust would continue to provide care in these circumstances. In addition, they contribute to the major incident plan. Key Informant 3 explains that the role of the Trust in a major incident is a generic one:

"Let's say for example we've got a rail crash at Nottingham station. As an acute receiving hospital we'd activate our plan and our work starts as soon as the ambulance turns up at the front door and the patient comes out but we do that every day. All we're doing now is we've probably had to suspend and cancel a number of services to accommodate what's coming in. It's business as usual but more extreme than it normally would be".

In a more extreme case, the Trust might be overwhelmed with the number of cases arriving at their doors. In this case, arrivals are diverted elsewhere while the emergency department catches up.

The Trust has representation on at least 90% of the different LRF groups, including the CBRN, health, flood planning and the resilience working groups (K3). As a health sector partner, they would be represented at other groups by the PCT.

3.1.8 The Environment Agency

The EA has two main areas of concern: flood defence, and pollution and regulation/licensing (K8). For flooding, this includes:

"...issuing flood warnings, working out flood extent mapping levels and things like that, designing and building the flood defences themselves and then operating the flood defence assets in the event of a flood incident. And obviously there's a whole lot of engineering and design elements to that" (K8).

There are two aspects to pollution and regulation. Firstly, there is the regulation of the waste and process industries, and the nuclear industry. Secondly, the EA responds to pollution incidents of rivers, ground water, coastal waters, tidal and fresh waters, whether they are from regulated sites or from road traffic collisions or sewage works etc.

The EA has senior managers at the strategic level of the LRF. Their involvement in the various sub groups is broad, encompassing the training sub group, CBRN, flooding, industrial hazards and recovery. They also contribute by correspondence to the health sub groups and the humanitarian assistance group. Key informant 8 feels the EA is both responder and support agency:

"Our support roles are issuing advice and technical advice and then managing the recovery and disposing of waste and things like that. But we also have a role to play in the response you know containing the pollution and actually in there with the emergency services so. As I say we've got a foot in either camp but not really solidly in either one, so it's funny, we kind of straddle two".

³⁵ <http://www.nuh.nhs.uk/about/>

This is reflected in the lower level of resources available to the EA for emergency response when compared to the traditional category one emergency services.

3.1.9 Nottingham City Council

Nottingham City Council is the non-metropolitan district council for the unitary authority of Nottingham in Nottinghamshire.

The City Council holds the secretariat of the LRF, alternating with the County Council. There is always an Emergency Planner on call and they have an emergency centre control room located at the city centre offices in the Guildhall on Burton Street in Nottingham. This is opened in an incident and can accommodate representatives of all relevant responding agencies. A director level control room manager would oversee the proceedings, together with a task manager, who monitors progress. Other available facilities include AV, 700 CCTV cameras, satellite phones, and GIS mapping. The City Council has a 24 hour on call system to emergency planners.

3.1.10 St John Ambulance

The mission statement of St John Ambulance is that no one should go without first aid. To this effect, it provides first aid at events, it trains individuals and children in first aid and provides support to EMAS, whether on a routine daily basis or in response to a major incident. In the case of major incident, key informant 11 explains that SJA should never be in front of the ambulance service, unless they are already at an event, as this manages the risk to SJA staff. Rather it is their role to back-fill behind them:

“So those calls that they would have been, the car crashes, the heart attacks, everything, we will be going to those and covering and looking after the wider populace because they’re having to concentrate on a specific incident”.

4.0 How effective is the Nottingham and Nottinghamshire LRF?

The overall impression given by respondents is that the Nottingham and Nottinghamshire LRF is effective and a number of reasons are identified for this.

4.1 Organisational aspects of the LRF

4.1.1 Governance

Governance is key to the effective working of the LRF. The police chair the LRF but the Secretariat alternates every two years between the City and County Council. The resulting “slight competitive aspect” between the two has a positive impact (K7). Despite the challenge of managing so many different partners, the LRF has “always been quite well led and quite well managed” (K5) and “it’s very functional, it’s very practical” (K6).

4.1.2 Organisational structure

Key informant 11 states that the success of the Nottingham and Nottinghamshire LRF is due to:

“the fact that they look at every single department, every single group that should be there, not just right, it’s police, fire, council. They’re willing to keep their eyes open and say well who else could benefit and support us? I think that’s a very positive, forward thinking approach”.

As issues arise, sub groups and task and finish groups can be created: “anything that comes up, we’ll set up a working group” (K16). The sub groups are generally seen to be an effective way of working. “If you want to produce some meaningful work which is done with cooperation which is a requirement of the act, then you really need those sub groups in place” (K8). Some LRFs have reportedly disbanded their sub groups but K8 questions how they will meet their obligations without them.

4.1.3 Relationships

Individual personalities are emphasized as being an important factor in the effective working of the LRF. For example, K4 states “I think the partners work well as a group. I think it’s personality. And the chairs of most of the standing groups all work well together, all get on well together”.

The fact that key people active within the LRF know each other means that there are strong relationships within the group. Examples of this come from:

- Fire and Rescue Service: “we have developed really good working relationships through the LRF which have extended beyond the LRF” (K7);
- Nottingham City Council: “I think that’s an excellent example, the local area flood plan templates, because it brings everyone together at the tactical level (my level) and brings together people at the operational level (or will do when we’re handed everything over) who are actually out there on the ground” (K1);
- Nottinghamshire Mental Health Trust: “So it’s really just being buddies!” (K6);
- SJA: “So especially the relationship we have with EMAS and the NHS in Nottinghamshire, they just accept my staff as part of what the NHS do* (K11)]
- Nottinghamshire Police Service: “that’s why the LRF works, because it’s a small community of planners who interact with their own agencies to make sure they’re fit for purpose under the CCA” (K9).

4.2 What does the LRF do well?

4.2.1 Risk assessment

One of the key groups of the LRF is the Risk Working Group, as this directs the work of all the other groups. An annual review of the Local Risk Register is undertaken based on information and intelligence received from central government. This review is undertaken by the most relevant responsible agencies. For example:

“Nottingham Fire and Rescue have a number of risk assessments that they’re responsible for and one of them is industrial hazards and explosions. So we have to risk assess that, see if anything’s changed, and then that will be put in context of all the other risk assessments that are carried out. And that will inform the work that we do” (K7).

The Nottingham and Nottinghamshire LRF risk assessment review is also informed by incidents outside of the region: “we may send representations to other areas who’ve had a particular type of incident so we can listen to the debrief” (K7).

4.2.2 Emergency multi-agency response

All LRF partners can activate command and control. This is when a situation “can’t be managed within normal management structures, normal processes and protocols” (K6). When this occurs, a gold (strategic) commander is identified from the lead agency, followed by lower levels of silver (tactical) and bronze (operational). The police often act as the lead agency:

“If it’s got a crime feel for it, the police would chair it. If it’s a fire, the fire service would chair it. If it’s flooding it’s likely to be the EA who chair it. Now I say that’s likely as on occasions people just default to the police to chair it. Because with any incident, there are going to be public order issues and public management issues which the police are every good at. So a lot of the time, even though it’s an incident specific gold, a lot of the time, the police do chair the gold” (K7).

These roles can be subject to change. For example, a fire might start off with the Fire Service in gold command; however, if it becomes a crime scene, this will be handed over to the police (K7). If there are casualties, EMAS would take charge of these and all medical resources and staff on site (K10).

A multi-agency coordination centre will be opened for a major incident, such as at Beeston fire station or the Police centre in Hucknall. There is also a control room at the City Council in Nottingham centre.

The protocols for the different levels are well known and rehearsed among the partners. They can be operationalised extremely quickly as the “triggers” (K7) are already in place. Therefore, in a major incident, everyone is familiar with the different roles, e.g.:

“there could be a police silver command coming to speak to you and you know roughly the level they’re coming in at, and how you communicate with each other” (K6).

Key informant 7 explains how the command process might work in practice:

“I end up having my own individual briefings with my operation command and sector command and any specialists I had there such as hazardous material advisors and communication and support officers. I had those briefings, set the objectives, how you’re going to deal with it, any problems to consider etc and straight after my briefing I went and had a multi agency briefing. So I gathered everybody round and then I communicated what we were doing, what was happening, what resources would go there and are there any problems from anybody. Took that into account” (K7).

Agencies such as the HPA and the EA have agreed protocols with the emergency services in a major incident. Certain triggers would necessitate their involvement, for example:

“a big factory going up in smoke, they (*the Fire Service*) would let us (*the EA*) know. Or a tanker truck full of chemicals crashing then they’d let us know about that as well. So then we would deploy people to site, we’d open our incident room up at our Nottingham office, that’s our area incident room and we’ve got a hierarchy of roles that we would send out and they’re trained to go to the right place at the rendezvous point and speak to the right people and respond in a professional way” (K8).

Key informant 7 underlines the importance of an integrated response at the scene of operation:

“At a 9/11 type event when everyone just surges to the scene, if we don’t understand each other’s roles, if our procedures aren’t integrated and dovetailed than we’re going to tread on each other’s toes and be less effective”.

In agreement is key informant 11:

“And I have the greatest respect for all the emergency services, not only them the voluntary services and the Local Authorities, the Environment Agency. If you’re not working together then that will create its own problems and the last thing you want in a major incident is further problems that you’ve self-created”.

In situations which exceed the capacities of the local agencies, mutual aid³⁶ is invoked with agencies from other regions. Examples of this being used are given relating to the miners’ strikes in 1984 and the EDL march in 2010 (K1).

4.2.3 Recovery

An important part of emergency planning and response is the aspect of recovery and the Recovery sub group has a specific focus on this.

“As you can imagine in every emergency, the aftermath, everybody wants to get back to normal, everybody wants to be back in their building, wants the sewage that’s been flooding into their premises to be cleared or anything like that” (K16).

The principle is to return the situation back to what it was but to also build in improvements to make the situation less likely to reoccur.

4.2.4 Input into urban design

The Police, the Fire Service and the EA have roles in the design and planning stage of urban buildings and environments.

NaCTSO and the CTSA’s are embedded within each police force to provide security guidance to businesses³⁷. The Police also have a number of Architectural Liaison Officers³⁸ who provide advice to those planning new builds:

“If you’re Boots and you’re building a new office block, where are you putting your post room? You should be putting it somewhere so if someone sends you a letter bomb, you should put it in a place where it’s not going to affect the public” (K9).

There is no legal obligation on those organisations to take this advice however. It is therefore often couched in more compelling business continuity³⁹ terms rather than related to a potential terrorist threat, that is, “we don’t bang the terrorist drum”.

³⁶ Fisher and Boshier, 2011: 5.8.2

³⁷ Fisher and Boshier, 2011: 5.6.4

³⁸ Fisher and Boshier, 2011: 5.6.1

³⁹ Fisher and Boshier, 2011: 5.3.2

DESURBS Deliverable 2.1: Roles of key stakeholders

This view point is supported by key informant 2 who uses crime as a catalyst to engage with businesses:

“if you focus on business continuity, with the person who’s got a business continuity vulnerability, inevitably you’re going to put some sort of crime reduction mechanism in there and it’s going to impact on emergency planning on partners”.

It can be a challenge to make the need for such security measures convincing as the terrorist threat is not widely perceived to be significant in Nottingham:

“So they say well when was the last time we had a terrorist attack in Nottingham? So I don’t need my bollards at the front and I don’t need to set the building back another 20 feet from the road edge and therefore reduce my safe area. So there’s quite a difficult balance there. So what we do is provide words of encouragement; we don’t scare people” (K9).

The Business Crime Manager for Nottinghamshire Police is unhappy with the division of responsibility for security of construction projects. The Centre for the Protection of National Infrastructure (CPNI⁴⁰) only takes responsibility once the construction stage is completed, leaving the onus on the local police force to respond to any resilience and crime issues. He gives the following example of how this works:

“18 months ago I had a phone call from the local beat sergeant asking us to come out and look at some metal and plant theft at Newark. And he said are you aware that they’re building a power station at Staythorpe? What about special branch and all the other bodies, do they know about it? No. So I rang special branch, a power station is being built, what do you know about it? Oh yes they will be building one at some point out but until it’s adopted by CPNI it’s not on our radar, we have no responsibility. It’s effectively a building site so it’s back to you..... And I ring the CPNI up, no once it’s handed over it’s our problem but until that point, it’s not. Well prior to the handover, we’d got assaults, political demos, and huge policing costs attached to it” (K2).

Fire regulations exist for all new buildings and the Fire and Rescue Service has legal responsibility for their enforcement. They are consulted at the planning stage through:

“our Fire Protection Departments, we have three in the country, and our own experts will go through the plans to see whether they feel they’re taking in relation to fire precautions are adequate” (K7).

The Fire and Rescue service only has statutory rights over enforcement of legislation from “the point at which the building is finished and then occupied” (K7).

The EA is only concerned with the enforcing legislation on the construction of ‘permitted sites’ (K8). Their role is demonstrated in the following example:

“Big heavy industrial sites mainly, waste sites; you know if somebody put in an application to build a waste transfer station or a waste treatment plant, we’d be dictating right from the start, you need to have this in place. The concrete needs to be of a certain thickness and

⁴⁰ Fisher and Boshier, 2011: 5.6.5

certain strength. You need to have sealable drains. You need to be able to stop run off from leaving the site, you need to have fences to a certain height so we'd get that designed into it right from the start. And the same is true of what we call PPC which are the big production facilities so food production, chemical production, that sort of thing. So that would be designed into them right from the start and it would be in their permit that they'd need to be able to do that" (K8).

4.2.5 Business Continuity⁴¹

The CCA obliges all responding agencies to be able to deliver their own services in times of adverse conditions and situations. This is therefore a major inward facing consideration for all agencies, which are required to have a business continuity plan which addresses their own actions during both internal and external 'emergencies' (K8). Key informant 6 explains:

"it is about this making sure that your plans are in place to continue delivering the essential services, those that you know you can't stop to backfill for other colleagues who might be off doing something else".

Severe weather affects many organisations to a greater or lesser degree. The HPA has robust IT systems that enable staff to work from home if necessary:

"We are really quite, particularly since we've not been in this building very long, about 18 months, so we have quite good IT network and support systems so the majority of professional staff can work from pretty much wherever they are if they've taken their lap top home with them. That's the biggest challenge! They will have remote access, they can access the servers here and we have telephone conferencing facilities. So by and large we've actually put that to the test quite robustly" (K6).

The EA has facilities for Connect 2 remote working from home, where staff can log onto the server. Connections to this are limited and have to be prioritised according to their critical business activities, i.e. "we have to make sure that we still respond to incidents and we have to make sure we can still do a, b and c" (K8).

The MHT has procedures to call in off duty staff in order to maintain services during a major incident as "never, or very rarely. Do our times of attendance or number of patients we see get altered" (K6).

There are examples of excellent multi-agency support during the recent severe weather. Key informant 9 explains the rationale behind this:

"So ok you're really struggling, that's affecting your capabilities as defined by the act: how is the multi-agency arena going to help you discharge your duties? So it's all about cooperation and collaboration".

Those organisations with 4x4 resources enabled others to continue to deliver their services. For example, the EA:

"Literally sort of carrying nurses around, delivering meals on wheels that sort of thing, getting people to far flung villages and what have you. Taking supplies out to far flung villages. It was

⁴¹ Fisher and Boshier, 2011: 5.3.2

DESURBS Deliverable 2.1: Roles of key stakeholders

quite nice in a sense in that when it's snowing, it's not flooding and you're not going to get a flood until that stops so they were just sitting there. They had the time; they can't go and maintain anything because it's all covered in snow so it's perfect really" (K8).

Similarly SJA claim to be able to cope with "everything the environment can throw at us: we're pretty used to getting round in bad weather" (K11):

"Severe weather, everything from 4x4 support, to people knocking on doors, and driving nurses/doctors, getting essential medical supplies for surgeons. We did a few runs where they couldn't get the medical supplies to the hospital for the surgeons to operate and I had 4x4 vehicles with their lights on to get them there" (K11).

Even the police shared transport: "we don't normally take passengers; so on the way to such and such we'll pick up so and so. And so the normal, I wouldn't say rules, but your normal way of working is modified or even set aside so you get over things" (K9).

Pandemic influenza is another serious potential threat to business continuity. Key informant 7 states:

"What we actually did we recognised quite quickly that the biggest impact of pandemic flu was on our own business continuity management. So we'd already set up our own business continuity team, and rather than just the resilience team attending these health meetings at the TCG, we mainstreamed it by asking a rep from the business continuity team that was dealing with our own internal thing, because they could take that straight back to the BC meetings that we had regularly and they could fee back directly from health what was going on".

In this way, their own business continuity plans were strengthened by the wider LRF plans for this.

In the health sector agencies, staff can be redeployed depending on where they can get to. During flooding, staff from the MHT were told:

"if you can't get to your base, go to your nearest NHS place and offer your services and that is always what we suggest to staff" (K6).

4.2.6 Communicating with the public

Within the LRF, the Communicating with the Public sub group is concerned with getting timely and effective messages out to the public (K6). Key informant 7 is very positive about how this works in Nottinghamshire:

"That's one of the areas I think we're strong in because the LRF has a communications group and each organisation has their communication experts on the group. Poor communication or a lack of communication leads to "scare mongering and panic" (K7). K6 gives the example of the recent riots in Nottingham: "Because during the public disorder, all sorts of rumours were going around and staff panicking, road blockages were happening and Matalan was on fire!"

Many of the agencies are exploring and developing innovative communication methods. For example, the EA has recently created a Face Book page and "people are being sent off on Twitter training courses" (K8).

DESURBS Deliverable 2.1: Roles of key stakeholders

Twitter is also proving useful to other agencies, such as the MHT:

“I think communication is always the thing that goes wrong and we did learn from the public disorder recently that the most up to date information is available on twitter. So we now have access to twitter on our blackberries....So Twitter was really useful because we could hear and see where the problems are” (K6).

The police also used Twitter to respond to these concerns, through Twitter, through their website, the local radio and TV. Appropriate spokespersons to the public are usually those at the strategic level.

The LRF Communicating with the Public group is there to ensure that consistent messages go out:

“So the message is x, y and z and that’s all agreed at tactical and strategic level and indeed many of the plans that the sub groups write have got pre prepared media messages in them” (K9).

However, for the true potential of these media to be realised, legislation is still required to enable cell broadcasts to be made:

“and just blast everybody’s mobile phone to say there’s been an incident in Nottingham city centre, please make your way to wherever, and that technology exists” (K9).

Key informant 2 is also advocating for these changes in regulation for the use of the Business Watch system.

The Nottinghamshire and Nottingham LRF was one of the first to have its own dedicated website (K10). The Nottinghamshire Prepared website⁴² is accessed through the Nottingham City Council pages. It contains information for householders and businesses on preparing for various emergency situations such as flooding, influenza pandemics and severe weather. However, the site had a poor hit rate of only 350 a day during the severe weather of 2010 (K4). Key informant 4 speculates that this is due to the poor accessibility of the website. Having recently joined the Communicating with the Public group, she is advocating for a link to the Chamber of Commerce and local businesses. Key informant 9 admits that this is a work in progress and they have plans to produce something which is more reader friendly.

The flood warning system is used by the EA to warn the public of flood risk. However, take up of this is low:

“because people either don’t know about it, they think it’s junk mail and throw it away when we give them the letter, or they just simply don’t want to know because as I say it potentially affects their insurance and everything else. It’s fairly emotive” (K8).

Consequently the EA is considering how to make membership of the list compulsory unless individuals chose to opt out of it.

⁴² <http://www.nottinghamcity.gov.uk/prepared/index.aspx?articleid=6529>

Good communication is also helpful within agencies. In an emergency, the MHT provides “reassurance to staff by sending emails, global emails to all staff or just those in the area, or ring round staff”. The Local Authority has also used YouTube for disseminating training packages during the flu pandemic (K6). Facebook proved to be useful for keeping absent staff up to date during the Nottingham riots (K9).

4.2.7 Evacuation and rest centres

The Nottinghamshire county Humanitarian Assistance plan was developed after the 7/7 bombings. This incorporates the idea of humanitarian assistance centres although it has never been used in Nottinghamshire. The idea is to have all relevant agencies available in the same place:

“There might be an insurance company there who can advise because your house has gone, PCTs who can sort out your prescriptions for you because they’ve all gone up in flames, bereavement counselling, psychological services, you know a whole plethora of agencies so you go in and whatever you need, you’ll be signposted to DSS if you haven’t got anywhere to live, and we’re all in there” (K6).

In less extreme circumstances, local authority Rest Centres can be opened to cater for people evacuated from their homes. Nottingham City Council has lists of appropriate buildings which have signed up to this function, such as schools or pubs. An example of how this might work is:

“There’s the famous story of Farndon, a fire on one of those line marking vehicles. The tub on the back is gas fires and caught on fire so they evacuated part of Farndon. Some went to the rest centre at Newark and others went to the village hall at Farndon and broke out all the cakes and bread and butter, and they had a whale of a time and they wouldn’t move to the rest centre. No we’ll stop here. We’re alright” (K1).

4.2.8 CBRN and decontamination

In a mass decontamination situation, several partners would be involved. The QMC has a large decontamination facility. Key informant 11 is responsible for emergency planning at the QMC and this covers the possibility of a contamination incident which potentially results in many people self-presenting at the hospital. In this case:

“We can lock down the emergency department if we want to, and we would do and then set up our decon. Our fear is that we could have 10, 100, a 1000 self-presenting people who think they’ve been affected wanting to be deconned” (K3).

The largest mobile decontamination facilities are held by the Fire and Rescue Service as part of the Dimensions project. EMAS also has some responsibility for decontamination of non-ambient casualties (K10). In addition, the HPA has some portable equipment at their Oxfordshire site which could be deployed “for putting large numbers of people through it quickly (K6).

The EA has a supporting role in dealing with the decontaminated water produced by this process:

“UK Water is an organisation made up of all the water companies across the UK so we’ve agreed with them and the fire service that when they start decontaminating people, we’ll provide a disposal route for that contaminated water within an hour. Whether that be to tanker or to foul sewage at the sewage treatment works” (K8).

4.2.9 Training and exercise

Within the LRF, there is a wide programme of training and exercise as part of the emergency planning cycle⁴³. The training group provides training through the LRF on issues seen to be appropriate. Other training needs are dealt with by single agency training. This is an important element of the success of multi-agency coordination in response to incidents, as: “policy made then has to be exercised and trained” (K1).

Key informant 4 states that Nottinghamshire is a pioneer in training at LRF level. Consequently she states: “we have been approached now by a number of counties to say could you share your training packages with us, could you come and deliver it, present it to us, how you do it?” (K4).

A more provocative view is offered by key informant 9. It is suggested that a major incident is needed (“it takes a Buncefield, it takes a London bombing” - K9) to make the need for training and exercising a high priority. He states:

“if I go to my deputy chief constable, who’s the chair of the LRF, and say to him, boss we need to worry about such and such. He’ll say oh don’t tell me about that, I’ve got crime figures to worry about”.

The following examples cover training on responding to air crashes, CBRN, flooding and terrorist attack:

- Nottinghamshire Police Service:
“And we did an air crash exercise at the beginning of this year, so we faked an air crash, again a good example of multi-agency working. We did a power station at Radcliffe, which was in the news for protests. So they’ve got an interest in working with the police at that level. We know they’ve acres and acres of waste ground, can we come? Oh do, oh yes. So that helps their liaison and we did this air crash scenario with them” (K9).
- Nottinghamshire Fire and Rescue Service:
“We had an exercise at a hospital recently called Big Foot, not last year, the year before, which was basically testing our mass contamination units. Based on the fact that there will be self-presenters at hospitals so if we have something in the city, we may need to put a resource at the hospital – it’s Queens- and we’ve tested that” (K7).

K7 comments on the importance of sending Fire and Rescue service personnel on LRF training course: “it’s one of the old sayings – the more you put in, the more you get out. That’s what the LRF boils down to”.

- The HPA:
“We did a large, it was actually run with money from the Department of Health about two and half years ago, ran a large exercise looking at the centre of Nottingham from the point of view of an explosion which contaminated the market square with caesium 135 or something like that; they used this as part of the scenario. And examined the multi-agency

⁴³ Fisher and Boshier, 2011: Figure 3

working, it was only a table top exercise. But examined all the issues in terms of dealing with the casualties and the screening of those casualties” (K5).

K5 comments that a second training event focussing on recovery and clean up was necessary but time and money prevented this.

- Nottingham City Council:
“Watermark exercise – used our own computers rather than this room (*the control room*), so that they knew could have access through the internet if this room did go, we knew we could access it through the internet and could work it” (K1).
- Nottinghamshire Mental Health Trust:
“I’m planning a huge exercise up at Rampton hospital next year. And because it’s high secure, it’s the equivalent of an NHS prison, the emergency services can’t just come in to deal with an issue. They have to be invited in. And it’s the only area where the police don’t take primacy. If we ask them to come and help us we then have to potentially hand over that incident and that area of the hospital so it’s very different. So something like that, all the partner agencies , I’m trying to make sure that they all have some role in this exercise to give them a flavour of what’s so different about high secure” (K6).

She is also organising a conference on the pre criminal space of terrorism, i.e. radicalisation and violent extremism.

- PCT:
“We’ve had our plans tested under project ARGON; we then last year did ARGON Choice, which was the table top exercise of our city centre site specific plan which is based on the terrorist threat. And we were planning to test the site specific plan under a live exercise on marathon day here in Nottingham because they close Derby Road which is the main road that runs past the Queens Medical Centre. In the past we’ve been able to test our decontamination footprint on marathon day outside the hospital but it just so happens that marathon day this year falls on the anniversary of the 9/11 disaster and it’s the teeth anniversary” (K4).
- EMAS:
“We’re going to be training our 200 control room staff, so I’ve been working on the packages for that for the last couple of weeks and it’s in final draft at the moment, so starting in November, between the beginning and the end of November, we’ll have actually trained all of our 200 control room staff in major ops training. We’ve done a process in the last year of doing all our bronze and silver commanders as well for major ops training which I’ve been involved in as well. So we do a lot of training” (K10).
- Nottingham University Hospitals NHS Trust:
“This year we’re involved in two external exercises and one internal, which I think is good. You know to say you only have to do one every three years, and we’re kind of an annual trust. We have an appetite for actually getting people to do what it says on the tin. Anyone

can write a plan on paper but need to exercise it. It can look fantastic until you actually exercise it” (K3).

- SJA:

“So when we practised Rising Tide, when we were practising for east coast flooding, we did it in real time. So working off, phoning counties up blind and saying right I need your ambulances and I think we had, don’t quote me on this, I think there was about 21 ambulances we had within Nottingham and we time scaled them and it was real people responding saying yes I can attend, because they were getting phoned up blind, to say can you do this?” (K11).

4.2.10 Community resilience

Several respondents raise the issue of community resilience as an important opportunity for improving urban security. Enhancing community resilience frees up agency resources in emergencies to address those in greatest need. The existing structures of parish councils, Neighbourhood Watch schemes etc , can be used to put community emergency procedures into place.

The SJA is piloting a new scheme called Community Emergency Volunteers i.e. “people in local risk areas of communities that decide they want to have the training and skills to support themselves when something happens” (K11). The rationale is that:

“Outlying village A, we know that they’re alright because they’ve got their parish plan and what they’ll do is, their nominated person....will ring the police and say, oh this is village A, we’re all safe and well, just to let you know. And then immediately there’s a hundred people that we know are safe, that don’t need our help ,so we haven’t got to patrol there” (K9).

In addition to their cadet activities, the SJA have an educational programme working in schools. Key informant 11 sees this as the “biggest part of resilience” as children are good at transmitting what they have learned to their parents. An example of this is:

“We ran an event called Challenge at the Hall last year, which invited school children from across the county to come and celebrate all the work that SJ had done within schools for the last five years. And it was a resilience type led emergency services round robin. So there were two first aid stands and the fire brigade and the county council” (K11).

Key informant 9 supports this view point and feels that the government has missed an important opportunity: “because kids are really good at going home and saying oh mummy, we did this and we’ve got to get a grab bag with a radio”. He also suggests that the most effective thing the CCA could have done initially was to distribute a wind up radio to every household as the start of a national programme of self-reliance.

In terms of cost effectiveness, key informant 11 feels that community resilience offers great value for money:

“The big blue lights are after the fact and to buy a new fire engine or ambulance or a very flash HART team ambulance costs an absolute fortune. To tell a kid to go home and find out where a torch is costs nothing”.

Community buy-in is often difficult to achieve however. The EA struggles to get households to sign up to the Flood Watch scheme, as they perceive that this will adversely affect their house prices (K8). The City Council also documents difficulties of engaging householders in flood prone areas with flood prevention ideas such as storing sand bags (K1).

4.2.11 Debriefing

Debriefing following any actual incident or training exercise, large or small, is a standard procedure but is also one of the highest priorities (K7). The purpose of this is to “identify the lessons of things that went well or things that you know you could improve on” (K5). It also ensures that “people are alright to go home basically” (K10). Lessons may be minor “but overall it improves the planning process and improves the response” (K10).

A debrief following a road accident will usually be held at the scene (a “hot debrief” –K11): “we forgot to bring enough cones or whatever it was, fine, there’s learning straight away” (K9).

A multi-agency response will require a multi-agency debrief: “you know bring a list of raspberries and strawberries to the meeting and then we have a multi-agency debriefing” (K9).

Structured debriefs are becoming more common, with several responders trained as structured debriefers (K10). This is when key players are brought together a while after the incident rather than having a “hot debrief” (K10).

It is important to learn from experience and to review future plans and responses. Key informant 9 is aware of the potential for public enquiries following any incident, and cites the recent Nottingham riots as a case in point:

“So we say if we were in the dock, you had a generic emergency response plan; why didn’t you get it off the shelf? It’s as basic as that. And so it’s not about covering your back but it’s just to say if the public enquiry comes along, and the rioting is a good case in point. You know straight after, one week later, we’d got Her Majesty’s Inspectorate of Constabulary here asking us how we did it, why we did things”.

Lesson learning can take place beyond the LRF area depending on the magnitude of the incident:

“And any incident that occurs, take the shooting for example, Derrick Bird, Raoul Moat, floodings, be it Cornwall, Wales, whatever, we learn and we share the learning and we try to make sure our plans are amended from other people’s disasters I suppose. And what went right, what went wrong” (K6).

4.2.12 The role of the Voluntary Services

Many of the respondents identified the importance of the role played by the voluntary sector who are “an integral part of the response” (K9). This can be the Red Cross, St John Ambulance, the Salvation Army, the WRVS and others. In fact, recognition of the contribution of the voluntary services is being revised in the forthcoming guide to the regulations (K9).

Examples of the contribution of these agencies are:

- At a reception centre following an incident: “there’s somebody there from the WRVS with a cup of tea, there’s somebody there from Samaritans, there’s somebody there from Citizens Advice who can talk to you about debt or about how to manage your insurance company and so on” (K9).
- “I’m a great believer that the voluntary services should be recognised more within the act. Everywhere I’ve been in my life anywhere in the world, there’s always the Red Cross, and they’re always there. The Salvation Army you know with a cup of tea, there needs to be recognition of that. And I’m sure when we were discussing it about the LRFs why don’t we make them a statutory body or whatever” (K7).
- SJA: “We recruit from the widest spectrum of people in the country. So I’ll have a mechanic on my vehicle with a road sweeper, or a solicitor.... You’ve got a problem, I had some of the young ambulance service guys, they were snowed in and they’d never seen it before. They were straight out of university; they’re brilliant, and fantastic with patients. What do I do? Well Angela goes to all my events for me as well as being one of my team leaders, so she says come here, what do you want to do? And they were pulled out” (K11).

Key informant 11 from SJA is aware of the respect which his organisation is given by the other agencies. SJA offers a unique understanding and level of local knowledge, especially in relation to emergency planning and response at events. They can also have a unique knowledge of a locality and its specific vulnerabilities and needs. Key informant 11 demonstrates the usefulness of SJA’s lists of individuals within communities:

“Lists are great. And what they do is a fantastic job but communities know communities and that’s because Fred lives in there and wants to look after his back garden. If you can get Fred looking after his back garden, life becomes easier” (K11).

5.0 How could the Nottingham and Nottinghamshire LRF be more effective?

Despite an overwhelmingly positive picture of the workings and activities of the Nottingham and Nottinghamshire, some weaknesses were identified. These were mainly from respondents who shared the generally positive attitude towards it.

5.1 Speed of process

K8 points out “perhaps things can be a little bit slow in happening; you know maybe a bit of talking goes on where a bit of action’s needed”. He qualifies this however as sometimes being necessary due to the number of partners who have to be consulted. He says “it’s just some things take time and discussions need to be had”.

Key informant 5 agrees that some LRF processes are inevitably lengthy. The original LRFs “were pretty much talking shops when they first started. Despite improvements, they “need to be a bit more challenging about it” (K5). This delay is linked to a lack of resources however, that are needed for broad consultation with partners to take place:

“I can sit down tomorrow and write a plan for something but it wouldn’t be much good as a multi-agency plan because if you spent the time necessary with other partner agencies to get their input to it, it would take you months to do the same piece of work quite literally” (K5).

5.2 Strategic sign up

“Strategic sign up” (K7) i.e. getting senior management to engage with the process is sometimes difficult:

“An example of that is the EA is trying to put together a Flood Forum at the strategic level so they’re looking for director level staff to join this strategic flood forum and we’re struggling at the moment to twist somebody’s arm to go to that. Because no one in the City Council is employed to deal with flooding directly. No, that’s not my job; I don’t want anything to do with it” (K1).

It is important that the appropriate level staff who can make decisions about resources should attend the meetings. Key informant 10 explains:

“You need people there who have got the authority to make decisions, that could spend millions if they needed to. So that’s the sort of level we’re talking at. Somebody with enough power and authority to commit perhaps a lot of resources and money to response. It’s not good having to ring up and say can we do this? It’s got to be the correct people at the correct meeting”.

There are also some concerns about the quality of the multi-agency plans as these are difficult to achieve without high level support. K5 states:

“Sometimes the multi-agency plans are found wanting. It’s about getting people’s buy-in for something that you might perceive as important but actually they think it’s somebody else’s job to do”.

5.3 Mainstreaming resilience

Mainstreaming resilience issues within organisations is identified by key informant 7 as something to be improved. A lack of awareness of agency involvement in the LRF prevents personnel from finding out more and engaging with the process:

“If there was a criticism of the LRF structure it is that it is a separate entity in a sense that some people within their own LA organisations, fire and rescue, don’t understand it; some people aren’t even aware of its existence” (K7).

He gives an example of the Warn and Inform group, which should have representation from the Fire and Rescue Service’s Community Safety Department, as this department would benefit from the broader focus of the sub group.

5.4 Localism

Key informant 5 feels the LRF tends to be parochial although this is “sometimes for good reason”, as the most appropriate level response is usually that of the local level. For agencies working at a broader level, such as the HPA, the requirement to tailor responses to local circumstances can be challenging, as this is at odds to the way they operate mainly as a national organisation:

“We as an agency, have a national plan, and it has to be adapted to fit with local circumstances which has to a certain extent to be done on the hoof as a consequence of that” (K5).

5.5 Siloed working

The notion that agencies still work in silos is not a widely held view point. Key informant 2 is cynical about the effectiveness of the LRF, as several times over the last five years, the Business Watch messaging system has been presented to its members but it has not yet been taken up. His main criticism seems to be the “protected siloed way” in which they work and suggests that greater collaboration and partnership working is needed.

5.6 Inter agency communications

This is an area which has been under development for a number of years and which still needs to “bed in a bit more” (K5).

Achieving interoperability regarding communications systems is a slow process, despite the fact that the blue light services and other agencies have had air wave systems for a number of years. Other agencies, such as the HPA only recently have had talk groups which enable it to talk to multi agency partners within the region (K5). This means that:

“There’s a system for saying we need to use airwave as part of our response to this particular incident. Something pretty large scale. We know how we’d actually put that up and running and working quite quickly” (K5).

Key informant 9 defends the police against criticisms of poor communication by the public:

“Even on a Saturday football match, it’s actually quite difficult for us to communicate with the radio system that we have. Albeit brand spanking new and modern and all the rest of it. It’s just the way that we use it”.

Key informant 10 says the basic organisation of the LRF could be improved by the introduction of an LRF meeting diary: “that the chairs of the meetings can put all the information and check on the dates before they book the meetings to ensure that they’re not duplicating the dates”.

5.7 Use of tools and hardware

There is no single system which all agencies subscribe to or use. All organisations can have access to the secure National Resilience Extranet (NRE). This system was funded and developed by the Civil Contingencies Secretariat and provides access to restricted documents which cannot be emailed or posted (K5). Agencies buy a two year license for use of this. Although agencies have been encouraged to subscribe, not all have done so. For example, the MHT does not use this due to reported failings of the system but mainly to the high cost (£15-20,000):

“There have been tools every so often and I feel very reluctant to spend public money on tools that I don’t think are necessarily going to be of benefit to the trust, patients or staff” (K6).

NRE is described as ‘very slow and a bit cumbersome’ (K10) and key informant 5 comments “I couldn’t see us using it in an emergency”. The fact that agencies are using it in a piecemeal way acts as a further disincentive for others:

DESURBS Deliverable 2.1: Roles of key stakeholders

“A lot of people are a bit dubious about signing up to the extranet so they haven’t got everyone’s signature on the paper and licences out yet. So it’s still a work in progress really” (K10).

The Atlas Incident Management System (AIMS) is used by several responders including EMAS, the Police, the Fire and Rescue Service and the County and City Councils. Key informant 7 explains how it works:

“We book information in, what action is required and put an action in, we can allocate that to someone and make it time bound, and then as they come back to us and say yes that’s been done, we can say completed and inform the relevant people. So it’s a management information system”.

He also feels that all agencies need to sign up to this system, “but it’s almost a step too far at the moment”.

There are more positive examples of the effective use of tools and hardware. The EA uses many different programmes. The main one used on a daily basis is the National Incident Recording System (NIRS): “which records every incident we get, enforcement outcomes, recharge outcomes and prioritisation and impact” (K8).

The EA also utilises a number of database systems that are “well embedded into the processes of how we do things, e.g.:

- for planning: “we’ve got a mechanism there by which we can say if you’re building a housing estate you need to be able to cater and put more sewage capability in or it won’t be able to cope” (K8);
- the Compliance Classification Scheme (CCS) database: “that records failures on sites from our inspections that we do” (K8);
- flood risk databases; and
- abstraction licensing databases.

The HPA also has a specifically designed tool called the HP Zone software system:

“which is used to record all types of incidents which involve a hazard to health. It’s also programmed to then include all the relevant and up to date guidance for particular categories of incidents. That’s a software system that was developed particularly for the HPA so it wouldn’t be used anywhere else”(K5).

Finally Business Watch is a messaging system used by the Nottinghamshire Police Business Crime Team. Businesses sign up to the system according to business type and location. Messages can then be sent to different groups on the system as appropriate. Key informant 2 explains how it can work:

“What I can then do is create the message, it converts it to voice, it will send it for me, and it will also convert it to text as well. And fire it out. I can pin map flood plains for instance or gas drift sites to communicate with people in a specific area, or below a certain level”.

5.8 Funding issues

All respondents express concerns about the impact of the current economic climate on emergency planning. Agencies are beginning to prioritise their involvement in LRF activities as the workload increases and staff numbers decrease. The impact on resilience is widely felt e.g.:

“I would like to see the government put more into insurance, so that we do have perhaps from time to time, the odd ambulance sat around doing nothing. Because if you want that insurance policy you need that resilience” (K9).

Examples of the impact of funding cuts follow:

- The HPA is experiencing 25% reduction in staff overall.
“Then there’s the whole process in the emergency planning cycle about training and testing and exercising that plan. That’s really takes a lot of resource and I always think we’re behind the curve and probably always will be. Particularly in the current climate because organisations are pulling resources out of emergency planning actually at the moment, including our own. So there will be less specialist resources not more in the future. That probably means , if you take the emergency planning cycle- risk assessment, planning, training, exercise, review, changes, it’ll be a slower cycle and probably won’t keep up with the whole changing environment” (K5).
- Fire and Rescue Service:
“We’re like any other organisation, we have to prioritise, and we’ve only got certain amount of resources, certain amount of people. So what we’ve tried to do is sit on the groups that have the biggest impact. Ultimately it’s being selfish you know you get the most benefit from” (K7).
- Nottingham City Council:
“I have got some concerns about the current economic climate and that everyone is shrinking and our team is shrinking, other teams are shrinking, I know the county council are. And whether we can do everything the CCA asks us to do or whether some of them have to go on back burner and be picked up later? That does concern me” (K1).
- EA:
“I think people are perhaps being a little bit more savvy in terms of which ones (*groups*) they go to in terms of, for example we don’t go to the telecommunications sub group anymore. We don’t have, we’re not heavy users of air wave like the police and the fire service so it’s not really required. For example we’ve just got a few airwave sets so we’ll perhaps contact that group and say we need the shared talk groups off you so we can programme them into our headsets so we can talk to you in an emergency, but that wouldn’t necessitate our going to the group and actually coming up with protocols on it. We’ll just piggy back; they don’t need us to do that so there’s a bit more correspondence. The meetings tend to be a little bit shorter now and some of them have been pared down in terms of frequency but generally, no it’s not made a huge difference” (K8).
- EMAS:
“It’s suffering greatly. There are lots of agencies that have recently lost posts. Because everybody is tightening their belts and they’re sort of pulling in, and depending on what size of team you’ve got, redundancies have been made or they’ve sort of natural wastage where people have retired, have taken slightly earlier retirement. I don’t know of any

agency at all that's not been affected to some degree". She continues: "it's putting strain on the people that are doing the work and obviously it's got to have an impact on resilience" (K4).

- SJA:
"it's more the fact that the support from the voluntary agencies for training, and funding of that training nationally could be better. Because we do get support from our LAs but sometimes well from our LRF, but that'll be the firemen giving up or the ambulance men giving up their personal time to train us..... But maybe it should be more of a national, this funding must be spent on training these volunteers to do and support. And I don't quite see that little pot of money sitting here. Even if it's not given to us, it's given to those people, to say right you can spend this on training those, I think that would be good" (K11).
- Nottinghamshire Police:
"and we all do it, you know, we all laugh every six weeks or two months when we get together, you know, how many people have you had made redundant? So we're always doing it under extra duress" (K9).

6.0 Examples of multi-agency responses to incidents

Respondents were asked to provide examples of effective multi-agency coordination in response to recent local incidents. Although asked to be specific, some of the incidents were of a generic nature, like flooding, or were hypothetical, such as a chemical suicide or the arrival of crowds of evacuated holiday makers at East Midlands Airport. Appendix 2 of this document, Table 2 provides an overview of which incidents were referred to and by whom.

The following incident cases demonstrate aspects of recent multi agency responses.

6.1 Nottingham city riots (July 2011)

A gold command was stood up during the Nottingham riots in July 2011. Key informant 10 feels that the strong response mitigated any further developments:

"The police called a gold level which is the highest level group together and we were talking through the processes we were going to use and the way we were actually going to deal with the issue of rioting. And they took a very definite stance, the police, about how they were going to deal with it, and as a result of that, we, I know that one of the police stations was bombed, and different things, but on the whole, we didn't have as much trouble as other areas, and I think that's because of the hard line that was took on it".

The MHT has an inpatient unit close to the city centre which they were concerned about as someone had tried to scale the fence. Furthermore the HART team was on placed on standby for EMAS which also:

"set up a duty rota so that we were at our HQs overnight through the early hours of the morning, so that if something did kick off, somebody was there ready to coordinate the response to getting our resources out quickly" (K10).

6.2 Fear of influenza pandemic (2009)

The health agencies have a lead role in the planning and response to an influenza pandemic, usually represented by the PCT. In an influenza pandemic, health advisors and the HPA are prominent. A tactical level coordination group was formed at this time, with health chairing initially, even though the influenza did not develop into a pandemic. This changed as:

“it soon became apparent that if the police took over the responsibility for chairing, health would be able to concentrate on delivering the response and remove the responsibility for organising meetings, being responsible for the secretariat, of notes and the like so the partners supported us as best they could, fully in the knowledge that at the end of the day the health community were the people that were having to deal with the issue on the ground” (K4).

The police provided support in case of civil unrest at anti viral treatment centres. The Nottingham SJA centre in the Meadows acted as a swine flu centre and:

“stored drugs downstairs in our secure drugs cabinet and for quite a few weeks the PCTS used this as swine flu and we assisted in the management of it” (K11).

6.3 Severe cold weather (2009 and 2010)

The severe weather of 2010 required a tactical rather than a strategic level response to be stood up:

“there wasn’t really much strategy to set. Because again in the plans, the strategy is already laid out. In police terms it’s always the same 10 things. In the fire service it’s always the same few things. So tactically it was about how are we all going to keep operating in the bad weather?” (K9).

During these periods, daily meetings or teleconferences were held:

“that incorporated all of the Local Authorities, all of the emergency services, the EA, the HPA, PCTs, Met Office, and some of the voluntary groups. And we used to have daily meetings to look at how we used to share 4 by 4 vehicles, so the EA who couldn’t do their normal work, were actually giving over their 4 by 4 vehicles to other agencies to use and that’s just an example of collaborative working really” (K10).

A key issue in the cold weather was one of logistics i.e. ensuring that as many agency staff as possible could get to work, and the multi-agency response of using 4x4 vehicles is by several respondents (K1, K6, K9 and K11). The LRF knowledge of who had such vehicles was used to call upon the Red Cross, the SJ, the EA and the Four by Four Society for assistance.

As well as supporting other agencies, SJA used its members in impassable villages to check on the vulnerable:

“we made a few phone calls around to find out you know from our databases, you know who lives in what village. And if those villages were really impassable, we were finding out, right who’s the vulnerable people? Just go for a walk, put your coat and go for a walk down the street, knock on the door of number 52 and just say are you alright, so someone has knocked on the door” (K11).

6.4 Flooding

There are several levels of planning for flood incidents: “the LRF plan, the city council plan; we have a separate plan for sandbags” (K1). The main drivers behind this are the local authorities, the Police, Fire and Rescue and EMAS.

Recent flooding incidents, such as those in Day Brook demonstrate a good multi-agency response:

“If we start looking at the wide scale flooding that is another really good example recently, where we had to have that level of collaboration, it was huge. We were setting rest centres up everywhere. We were working with St John Ambulance because we were evacuating people from flooded areas and they were providing the transport. We were using fire stations as initial places of safety. We were then, the 3rd sector was opening up the rest centres, the leisure centres. And that was completely all over the county. The police were assisting with road closures; the Highways Department from the Local Authority; emergency planning from the city and county were involved. It was the HPA involved because of the health implications; the ambulance service were looking after vulnerable people and it sort of again even at that sort of scale of incident, there was a large number of people” (K7).

The EA plays a vital role. As well as increasing flood defences, it operates a flood warning system and assists in times of emergency:

“You only need a relatively small amount of rainfall to make it flood properties so again that’s one we’ve been doing a lot of work on recently. We’ve had people, their houses actually flooded, it caused a landslide recently as well which resulted in a fair amount of response between us mainly us and the LA I think as obviously they had to re-house people. We were out there walking the streets and trying to tell people what was happening and where the flood extent was going to be and whether their property was safe or not” (K8).

Other agencies such as the MHT struggled to maintain business continuity: “we were all in the same boat and if your staff can’t get out to A, can B get to A?”(K6). In these circumstances, multi-agency logistics support is offered in the same way as in the severe weather.

6.5 Fires

6.5.1 Tyre fire at Warsop (May 2009)

A large fire at a tyre plant in 2009 involved several partners. This was a site regulated and licensed by the EA. The fire burned for 15 weeks and had associated risks of access for the fire service, contaminated runoff water, toxic smoke over residential areas. Key informant 8 states:

“We worked very closely with the fire service and HPA and again messages going out to the residents which was very important because they could see this stuff and were thinking well what is it? Is it dangerous and is it going to blow into our houses”.

6.5.2 Fire at JAYPlas, Loughborough (May 2011)

This involved a lot of resources by the police, fire and the ambulance services. The HPA were also involved from midnight of 2nd May to late evening on 3rd May.

6.5.3 School fire, Mansfield (April 2011)

The response to a fire at Sherwood Hall School in April shows a strong multi-agency response:

“It was interesting because we did have the police there blocking the roads, we had the ambulance service there, HART, and they’d set up a centre there. We had the local district council there because they were, their building control people were there, two of them. We had the voluntary sector there because we were evacuating a number of people. We had emergency planners at a local pub where we evacuated people to so we were coordinating with the county council. And then we had the EA involved because of the smoke plume. We were getting advice from the HPA. And it just got bigger and bigger. We had the education department from the local county council; they were also involved because they brought us some information regarding the asbestos that was contained in that school” (K7).

6.6 Nottingham Goose Fair

Nottingham Goose Fair is held annually at a site within close proximity of the city centre. Key informant 11 suggests that the way this is organised each year demonstrates the strengths of multi-agency coordination:

“You’ve got everybody from the trams, the bus companies he gets in, to and that’s just blocking off the roads. The Highways Agencies, the ambulance service, fire brigade, the police that are involved, show security groups that are set in, all the shops’ security, SJ. It really does just spread out, down to the road cleaners. How they support the management of the event just with road cleaners, because clearing the event through and clearing certain areas and supporting it, it’s brilliant. And it’s team working and I think they’ve really got it down to a tee” (K11).

6.7 Terrorist related incidents

Nottingham is one of 18 ‘model cities’ (K9) in the UK. This requires these cities to develop site specific plans in the event of a conventional or terrorist CBRN attack. The Fire and Rescue Service sits on the site specific group which is responsible for this plan:

“It’s a multi-agency plan. There are two parts to the plan, one is which is very general about the roles each person would take, and basic procedures, and the second part which is a very sensitive and restricted document is around specific locations where things would set up” (K7).

Very few references are made to the terrorist threat by respondents. This is partly because Nottingham has not been subject to a major terrorist attack. Another reason given is the sensitivity of the information. Another explanation is offered by key informant 9:

“We don’t speak about terrorism specially. A couple of reasons, one is to do with the working of the act which says you need to inform people but not alarm people unnecessarily. So there’s that, because there is no intelligence to say that Nottingham is more at risk than anywhere else. So terrorism is a national risk and it’s quite difficult to contextualise locally because there’s nothing to say Nottingham’s higher on the hit list than Glasgow or Lincoln.”

References to hypothetical or possible incidents are white powder (see 6.61), CBRN attack (K7), and potential incidents at major cricketing events (K2).

6.7.1 White powder incidents

If someone receives a package containing an unidentified white powder, it is reported to the Fire and Rescue Service. Nottinghamshire receives two or three of this type of call annually. Key informant 7 describes a typical response:

“We have a set procedure which we all use. The police carry out the credibility test; they carry out a risk assessment to say if it’s credible. If it’s not credible, we treat it in one way; if it is credible, we treat it in another. We send resources to the scene; we have specialist DIM officers, they’re identification and monitoring officers with specific equipment so we can try and identify the chemical that’s involved. EMAS, their HART team, they have a specific role”.

7.0 Conclusions and key messages

The following are the key messages and learning points arising from the interviews:

- The CCA 2004 built on a firm foundation of multi-agency coordination in Nottingham and Nottinghamshire. Prior to this legislation, the EPLG worked together, albeit not with the wide range of agencies currently in the LRF, however, it went part way to delivering an integrated response to emergencies and incidents.
- The structure of the LRF conforms to the regulations of the CCA. This is helpful as each layer of authority has a specific role and there is a clear process by which risks are assessed, tasks allocated and carried out and reported back up to the strategic level. These requirements can result in lengthy and therefore costly processes of consultation. There seems to be no obvious resolution to this.
- The national level risk assessment feeds directly into the local cycle of risk assessment and emergency planning, and even more so since greater access to restricted information has been made available to local police forces. This results in a strong defence against nationally identified priorities. However some of these priorities may not have such prominence at the local level and time can be wasted planning for them.
- The Nottingham and Nottinghamshire LRF encompasses a wide range of organisations, many of which are not category one or two responders, but are still deemed to be essential ‘other responders’. This broad brush approach appears to offer great benefits, as exemplified by the support offered by the MHT and the SJA. This allows the main responding agencies to be back filled in times of pressure. In order for this system to work, there needs to be a lack of perceived hierarchical status between the agencies. The accounts of the various respondents demonstrate that there is a high level of mutual respect and understanding which allows this to succeed.
- One of the key ingredients to the success of the Nottingham and Nottinghamshire LRF are the strong relationships that exist between both individuals and agencies within the group. In spite of some tensions (e.g. between the city and county councils), there is a good working relationship based on individuals knowing each other well and being familiar with

common ways of working. This means that no introductions are needed, prior to getting onto implementing a response.

- All agencies are fully conversant with the command and control structure. Its protocols for the different levels of response are well known and rehearsed so that in an emergency, all responders know the 'triggers' i.e. who is in charge, who they report to, and what procedures they should follow. There is some need for further mainstreaming of the LRF principles, and knowledge about its existence and purpose could be increased across all agency staff. However this does not appear to adversely affect response.
- The lack of legal status and specific funding of the LRF means that cooperation is not mandatory. This could be increasingly an issue for those responders who are not category one or two, and who might choose to lessen their involvement, especially during time of economic cutbacks. It also allows those in senior positions within all agencies to prioritise issues as they see fit, rather than according to the priorities defined by the LRF.
- Terrorism does not feature strongly at a local level in terms of response. This may be partly due to the restricted nature of the information and a need to maintain that confidentiality within the key agencies. There is also the fact that Nottingham has not been hit by a serious terrorist attack, while there are other high risk factors which are known to affect the community and which are known to be more likely to happen.
- Training and exercise is a recognised strength of the Nottingham and Nottinghamshire LRF and is directly related to delivering a strongly coordinated response on the ground. The system of debriefing following any incident is well rehearsed and essential for learning and applying lessons moving forwards.
- An effective internal facing response in the form of business continuity planning is vital to being able to deliver an effective external response to incidents. This is achieved by a requirement of the CCA for agencies to produce their own business continuity plan. Equally important are multi-agency coordination, logistical support and back filling offered at times when adherence to this is threatened. Incidences of flooding and severe weather clearly demonstrate how this works in Nottingham and Nottinghamshire.
- Communication is an issue requiring more development, both in terms of communicating with the public and between agencies. Innovative approaches are being developed using social media and have proved useful already. Certain barriers exist to achieving greater communication in the form of legislation on blanket texting and the willingness of the public to listen and respond to messages. Changing legislation may prove to be easier than changing behaviour.
- Areas of response which have not been tested in real life situations are perhaps the most questionable in terms of their likelihood of success. Several respondents refer to the fact that although planning is in place for many kinds of events, a real life scenario may reveal unexpected factors. On the other hand, emergency situations may call for a response

DESURBS Deliverable 2.1: Roles of key stakeholders

outside of the scope of the plan and this is when for example, the military might agree to assist although they are not a formal responder.

- The concept of involving the community is a potential opportunity for strengthening resilience. This may involve communities working together to protect themselves, training of school children, and using the services of voluntary agencies.
- A range of tools and hardware are used across the agencies. Those systems that could provide assistance agency-wide, such as NRE and AIMS are not being fully utilised. This is partly due to cost, which again is becoming a more significant issue at the current time. The systems in question are however not seen to offer as effective a service as might have been hoped and there is room for improvement here to incentivise subscription overall.
- There is some involvement by Nottingham police, the Fire and rescue Service and the EA in the design and planning of urban environments. However there are limits to their powers and they mainly take an advisory role.
- Resilience is clearly under threat from economic measures applied to all agencies, either through losing staff or resources or both. This is seen to adversely affect the programme of training and exercise, attendance at meetings, the length of meetings and therefore the depth at which issues are addressed, the number of volunteers and financial support for voluntary agencies. The long term impacts of this are unclear but there is clear concern from all respondents that the activities of the LRF and the consequent level of response and resilience might deteriorate.

Appendix 1

Check list of questions for DESURBs respondents – to be used as appropriate depending on the organisation/individual role

Preliminary discussion:

How long have we got?

Is it ok to record?

Tell them about the project - Consent form signed

(For the questions below, try to get examples to demonstrate points made where appropriate)

Section 1: Safety, risk and threat management / emergency preparedness / crime reduction activities etc.

1. Describe the organisation briefly- its nature and scope
2. Describe their own role within it - what does it cover?
3. How is their organisation involved in safety, risk and threat management / emergency preparedness / crime reduction activities in Nottingham/shire?
4. What are the main manmade threats and natural hazards in Nottingham/shire that their organization potentially has to deal with?
5. Describe specific planning, response and recovery processes they and their organisation are involved in
6. Describe any areas of direct and indirect responsibility relating to these

Section 2: Coordination/cooperation between agencies

7. The coordination between different agencies in Nottinghamshire:
 - a. What is their involvement and role?
 - b. Which agencies do they work most closely with?
 - c. How effective is this?
 - d. Suggested areas for improvement
8. The Civil Contingencies Act 2004:
 - a. What has the impact of this been?
 - b. How does it work in practice for them?
 - c. Has it been effective?
 - d. Areas still requiring attention
9. Nottingham Local Resilience Forum:
 - a. What is their role in this?
 - b. How effective or not is it? Give reasons
 - c. Examples of LRF in practice
 - d. Could it be improved and how?
 - e. How do the links between Regional Resilience Forum and LRF work?

10. Any other examples of coordination with other agencies outside of the LRF?
11. Any suggested improvements for broader Integrated Emergency Management in Nottingham/shire?

Section 3: Planning and design

12. Involvement of urban planners/designers:
 - a. Is there need and scope for this?
 - b. Any experience of where this has happened?
 - c. Knowledge of planning applications near to their organization site relating to urban resilience?
 - d. Threats/hazards relating to their building/location?

Section 4: Tools and strategies

13. Use or awareness of tools and strategies that can help them?
14. Use or awareness of tools and strategies to better inform decision makers on urban security?

Section 5: Incidents

15. Examples of incidents that they have been involved in affecting public urban spaces (this can include the incidents that were avoided and/or minimised through good urban design, emergency planning and security measures)

Section 6: Contact details for other key informants

Appendix 2

Table 2. Incidents and key informants

Incident	Year	Key informants
Severe weather	2009 and 2010	1, 4, 6, 9, 11
Swine flu	2010	4, 6, 7, 9, 11
Nottingham riots	2011	6, 9, 10, 11
Flooding	-	1, 6, 7, 8
Flooding at Day Brook	-	8
7/7	2005	6
CBRN	-	4,
Tyre fire, New Basford	2011	5,
Tyre fire, Warsop	2009	8
Fire at JAYPlas, Loughborough	2011	5,
Fire at Mansfield school	2011	7
Fire, Goldsmiths St, Nottingham	2010	1
Airport incident	-	10,
Goose Fair	-	11
Robin Hood Marathon	-	11
Burst water mains, Stapleford	2010	1, 7,, 8
A1 chemical spill	2011	8
EDL march, Nottingham	2010	1
20/20 cricket, Nottingham	2008	2
Murder of Jai Ashton, Derbyshire	2011	2
White powder incidents	-	7
Chemical suicide	-	6