

## Creating a mapping tool for responding to climate change related extreme weather: Leeds City Council

### 1. SUMMARY

The aim of this project was to create a GIS mapping tool that would allow partners within and outside of Leeds City Council to prepare for and respond to climate change related extreme weather and which could be transferred to the remaining core cities and other areas. The tool was intended to serve two functions:

- Strategic planning: including data at neighbourhood level, allowing a wide range of teams within the Council and outside voluntary sector organisations to highlight neighbourhoods at greater risk and help them to prepare vulnerable residents for severe weather
- Emergency Response: restricted to Leeds City Council Peace and Emergency Planning Unit and Category 1 Responders, such as the ambulance and fire and rescue services, and containing data on the location of individual vulnerable households likely to be in need of rescue in the event of an emergency situation.

### 2. ACTIVITIES

Leeds’ Climate Change Strategy included an aim to develop and trial a methodology for detailed vulnerability mapping across the City, and in 2011, Leeds, along with the other core cities secured funding through a bid to DEFRA to develop a mapping tool which would allow this to be achieved, at the same time as enhancing the emergency services’ ability to assist vulnerable householders in the event of an emergency.

Acclimatise UK were commissioned to develop a methodology based on the Joseph Rowntree Foundation report on socio-spatial climate vulnerability which underpins ClimateJust (Figure 1). The different map layers have been arranged to allow users to map the following characteristics of populations across the City:

- Sensitivity/enhanced exposure i.e. the physical predisposition of human beings, infrastructure and the environment to be affected by a dangerous phenomenon such as severe weather
- Adaptive capacity of individuals or communities to prepare, respond & recover from severe weather
- Exposure of parts of the City to particular climate events or severe weather.

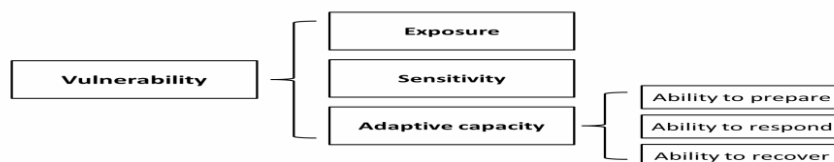


Figure 1: Working definition of climate vulnerability (Based on IPCC, 2007; Lindley et al., 2011)

The tool collates existing GIS datasets from a variety of sources including the Council, the Environment Agency, census data, and, in the case of emergency response, regularly updated sensitive data from social services. As well as liaising with the owners of the various data sets to ascertain what the best data sets were likely to be, the project was developed with the cooperation of the partners within and outside of the Council who are likely to benefit from the scheme, including the emergency services and the NHS, who were able to input their requirements of the final product.

**Partners:** Acclimatise UK, Leeds City Council, emergency services, Environment Agency, NHS, Social services.

**Length of time:** 6 months for development with roll out of the tool itself in progress.

**Funding:** Defra – as part of a Core Cities bid.

### 3. OUTCOMES

The work used Leeds as a template and resulted in a detailed report outlining the theory behind the project, information on selecting and structuring the data and potential options for the practical hosting of the tool, as well as a detailed inventory of the data sets required for each of the core cities. Although the project was designed around Leeds, it also included work and training sessions with the other core cities and the methodology has been designed to be transferrable to other areas across the Country. For Leeds, a GIS database of the tool was also produced, which is available in ARCGIS. Examples of outputs are shown in Figure 2. The tool will assist two sets of partners:

- Teams and partners within the Council such as social care, children’s services, public health, NHS Leeds and organisations in the voluntary and community sector to identify which of their clients are most at risk of climate change and prepare them
- The Peace and Emergency Planning Unit and Category 1 responders to locate and rescue vulnerable people in the event of a climate related, or other emergency.

The work will help cities to implement chapter 4 of the National Adaptation Programme, building healthy and resilient communities, by helping them to fulfil the following objectives in particular:

- 11) Reduce the risk of death and illness associated with severe weather events and climate change and increase preparedness and resilience to the impacts on public health
- 13) Minimise the impacts of climate change on vulnerable groups in society by strengthening their resilience to better prepare for, respond to and recover from future climate risk
- 14) Promote and strengthen community resilience to severe weather related events linked to climate change (preparation, response and recovery) and the climate resilience of the other emergency services and other Category 1 and 2 responders of the local resilience forum.

Next steps include:

- Updating the data sharing agreement between adult social care, children’s services, and the emergency planning team to enable mapping of the location of vulnerable people in the event of an emergency
- Updating server capacity within Leeds City Council to enable hosting of the mapping tool and access by relevant partners within the council
- Agreeing with data owners which data sets can be made available more widely than the council, and if not, which can be substituted

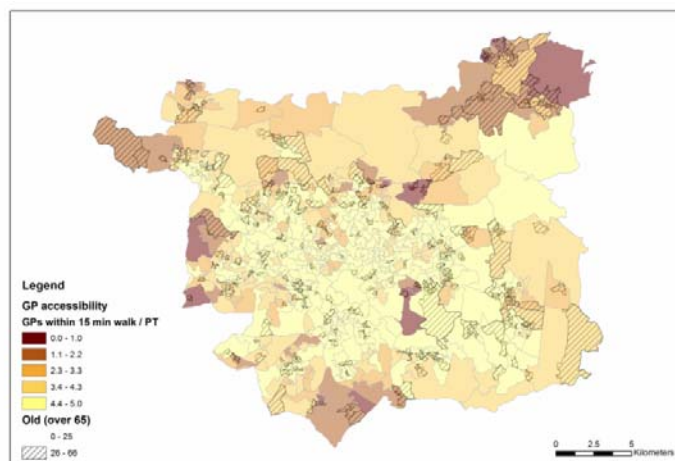


Figure 2: Overlay of areas where over 25% of residents are 65 or older with statistics reflecting number of GP centres available within a 15 minute walk or travel by public transport

#### 4. BARRIERS

The amount of time that it would take to arrange for the hosting of the tool and data sharing agreements was underestimated. If embarking on a similar project in the future, this needs to be considered.

#### 5. GUIDING PRINCIPLES

- ✓ Include input from as many potential final users of the tool in its development as possible
- ✓ Be prepared to look for different solutions, for example in hosting, if one option doesn’t work out
- ✓ Include all intended phases and outcomes of the project when specifying hosting solutions etc
- ✓ Don’t underestimate the time needed to update data sharing agreements
- ✓ Don’t lose sight of the key needs of end users

#### 6. CONTACTS

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