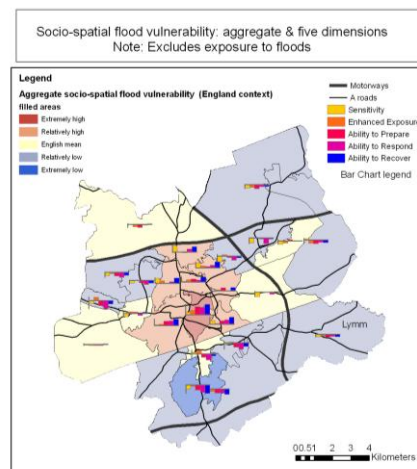


Cheshire and Warrington

CLIMATE RESILIENT COMMUNITIES

“Communities and individuals harnessing local resources and expertise to help themselves to prepare for the changes in our climate”



REPORT: MARCH 2012

CHESHIRE AND WARRINGTON CLIMATE RESILIENT COMMUNITIES

1. Introduction

Cheshire West and Chester were commissioned by The Department for Environment, Food and Rural Affairs to undertake guidance on how communities should be better prepared to help themselves in severe weather conditions and start to mitigate the effects of climate change upon their community.

2. Background

Community resilience to climatic impacts is important as emergencies occur and preparing oneself, one's family and the local community will make it easier to recover from the impacts of an emergency or serious incident.

This is increasingly being identified as a **local and sub-national priority** within Cheshire West and Chester and the wider sub-region (including the Authorities of Cheshire East and Warrington). Awareness of the risks, the resources (formal and community level) to help is vital. Also, having communities better prepared to help themselves and an ability for category one and other emergency responders to be able to prioritise their resources to respond to greatest need/vulnerability will be of ever greater importance as climate change increases the type, severity and frequency of climatic impacts we expect.

Through delivering this, the project has built upon a strong network of over 40 groups across Cheshire and Warrington, who are already acting on climate change ([see video](#)). These groups are already meeting (individually and collectively) and therefore this project has short cut the development and capacity building in the groups and started to help them to be more climate-resilient. Nearly all of the groups have developed mitigation **but not adaptation** programmes. This adaptation project therefore builds upon and nurtures community participation to deliver the additional community resilience required. It does this by using the existing community networks, contacts and champions to build confidence to ensure that these communities are prepared for the predicted impacts of climate change.

3. Policy Framework

There is array of advice and documentation for individuals and communities wanting to prepare themselves for effect of climate change, including the following:

3.1 National

- [The Cold Weather Plan for England](#) was issued on 1 November 2011. It is part of the wider suite of measures to protect individuals and communities from the effects of severe winter weather. The Plan provides advice for individuals, communities and agencies on how to prepare for and respond to severe cold weather as part of wider winter planning.

- [The Heatwave Plan for England](#) was re-issued in May 2011 as a part of raising both public and professional awareness and to enhance resilience in the event of a heatwave. This document not only looks at the short term reaction and preparation, but also starts to look at **long term mitigation measures**: *“Greening the built environment: Trees, plants and green spaces act as natural air-conditioners, provide shade and absorb carbon dioxide. They also help to reduce the impact of flooding. Urban planners, schools and health and social care organisations should aim to maximise opportunities to ‘green the environment’ along streets and around buildings”*
- [The Cabinet Office](#) has information on their website about Community Resilience and very useful templates and guidance, including a template for Community Emergency Plans.
- [Directgov website](#) also gives advice about getting ready for winter.
- [The Environment Agency](#) has a range of tools and guidance on their website about preparing for flooding etc, including a [flood plan template](#) to help individuals decide what practical actions to take before and during a flood, which will help reduce the damage flooding could cause.
- [The Health Protection Agency](#) has advice on health implications of extreme weather events such as extensive flooding and research into the effects of extreme cold weather and heatwaves.

3.2 Local

- [The Cheshire Local Resilience Forum](#) (LRF) has dedicated web pages for preparation for emergencies, including guidance about a grab bag etc.
- [Cheshire Fire and Rescue Service](#) gives advice about being prepared for bad weather/ winter driving.
- [Cheshire Constabulary](#) gives advice about driving in extreme weather.
- [United Utilities](#) gives advice on how to protect your house over winter, guidance on avoiding frozen pipes etc.
- [NHS Western Cheshire](#) produces press release about being prepared for icy conditions and asks people to look out for elderly neighbours, friends and relatives and to prepare.

4. Data on vulnerable communities

The impacts of extreme weather events and the climate are concentrated among certain groups and in certain areas, as they are in other countries. Vulnerability varies from place to place due to geography and the physical characteristics of locations. Vulnerability is also determined by the characteristics of local populations, including age structure, income levels, education, health and mobility. A recent study by the [Joseph Rowntree Foundation](#) has found that these socio-economic characteristics can have a significant effect on the inherent vulnerability of a local community to climate risks. Sometimes the physical and socio-economic characteristics of communities can combine to exacerbate the vulnerability of certain groups.

Across Cheshire and Warrington there is a vast range of data available on vulnerable areas/ communities. The following list is not exhaustive, but covers the main data sets/ information available:

Environment Agency	<ul style="list-style-type: none"> Areas Susceptible to Surface Water Flooding (AStSW) Flood Map for Surface Water (FMfSW) Flood Map (Rivers and the Sea) Areas Susceptible to Groundwater Flooding Groundwater Emergence Maps National Receptors Dataset Indicative Flood Risk Areas Historic Flood Map Catchment Flood Management Plans
Local Authorities	<ul style="list-style-type: none"> Preliminary Flood Risk Assessment Historical flooding records Anecdotal information Strategic Flood Risk Assessments (SFRA) Historical flooding records Multi-agency flood response plans Local Climate Impact Profiles (LCLIPS) Assisted bin collection rounds
Water Companies	DG5 Register
Fire & Rescue Services	<ul style="list-style-type: none"> Incident response Over 75 years old, living on own Oxygen users
NHS/ PCT	<ul style="list-style-type: none"> Excessive winter deaths Trips and falls, Accident Emergency admissions
Mersey Forest	Green Infrastructure Resources & Information
Cheshire Community Action	Off Mains Gas areas in Cheshire and Warrington
Joseph Rowntree Foundation_ University of Manchester	Socio-spatial flood vulnerability

It is obvious there is lot of data 'available'. However, there are issues in terms of:

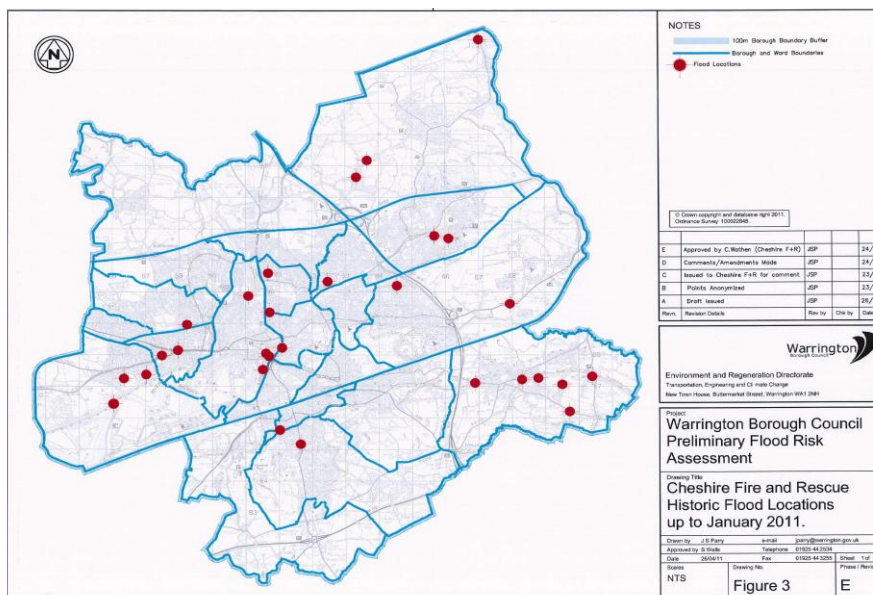
- identification key contacts/ gatekeeper of the data sets/ information
- consistent and historic data
- common recording systems across the area
- format of data systems used: software compatibility
- open access
- data sharing protocols
- information based on existing situation and not future climate change predictions

In terms of using the above information, at community meetings, it being aware of this data, but providing a limited bespoke vulnerability mapping as an introduction/ presentation to communities. This information has been added to with local knowledge and memories (sometimes up to 50 years ago) and hopefully will lead to communities collecting photographs, video clips of past local events to be used in a resilience plan/ exhibition.

The following data has been in community meetings used to introduce the issue:

- Preliminary Flood Risk Assessment:

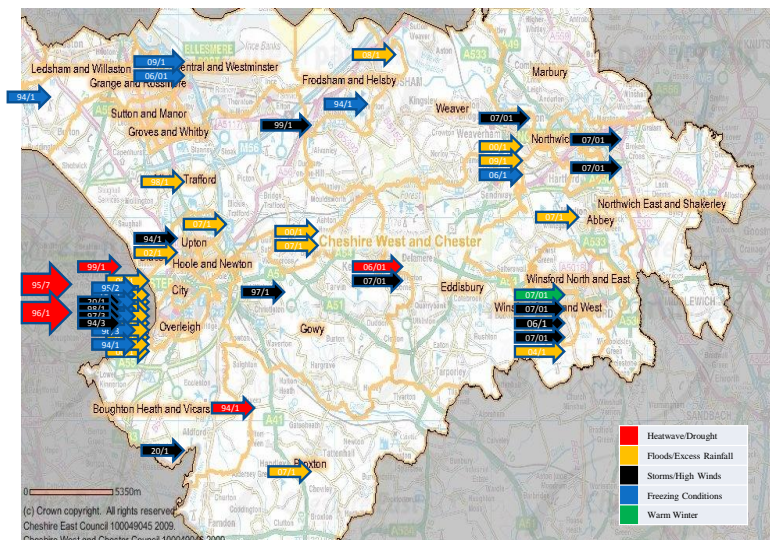
Councils are Lead Local Flood Authority (LLFA) and therefore required by the Flood Risk Regulations 2009 to produce a Preliminary Flood Risk Assessment (PFRA). The regulations require LLFA's to consider flood risk from local sources (surface water, groundwater, ordinary watercourses and canals). The flood hazard and flood risk maps from the PFRA have been used to provide local illustration of flood locations in each community.



- Local Climate Impact Profiles (LCLIPs)

The LCLIP provides a spatial baseline to raise awareness with communities about where, how, and when weather events have had a significant impact in their area.

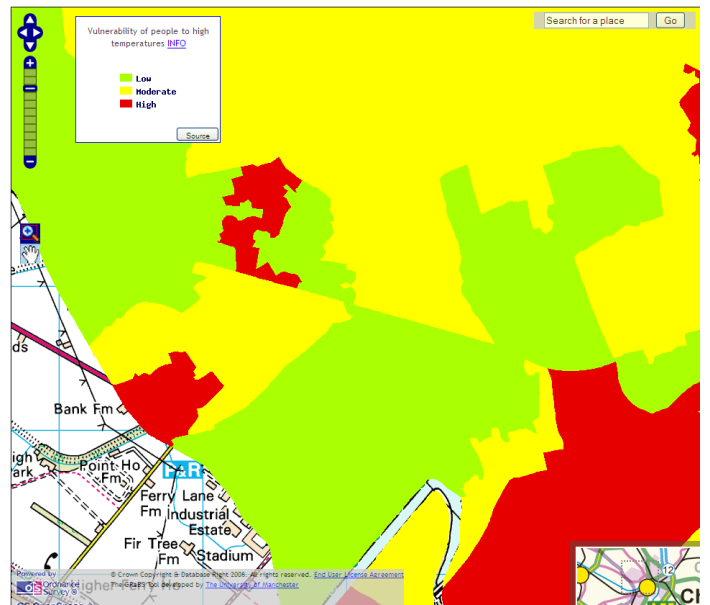
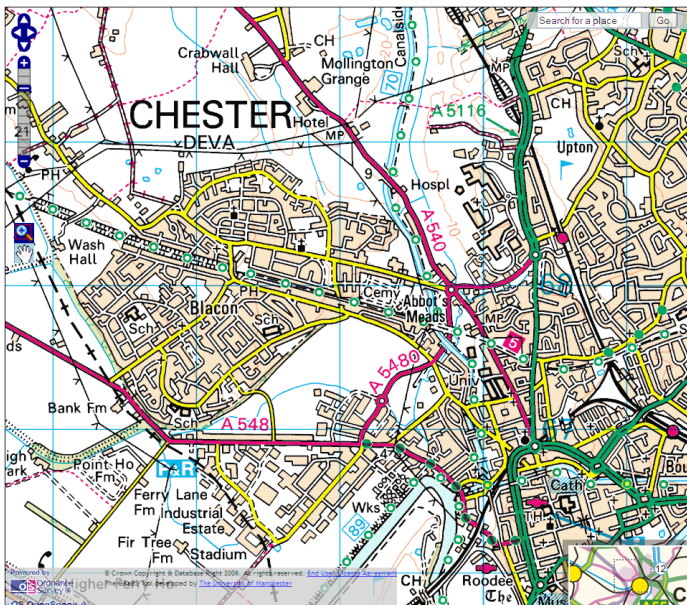
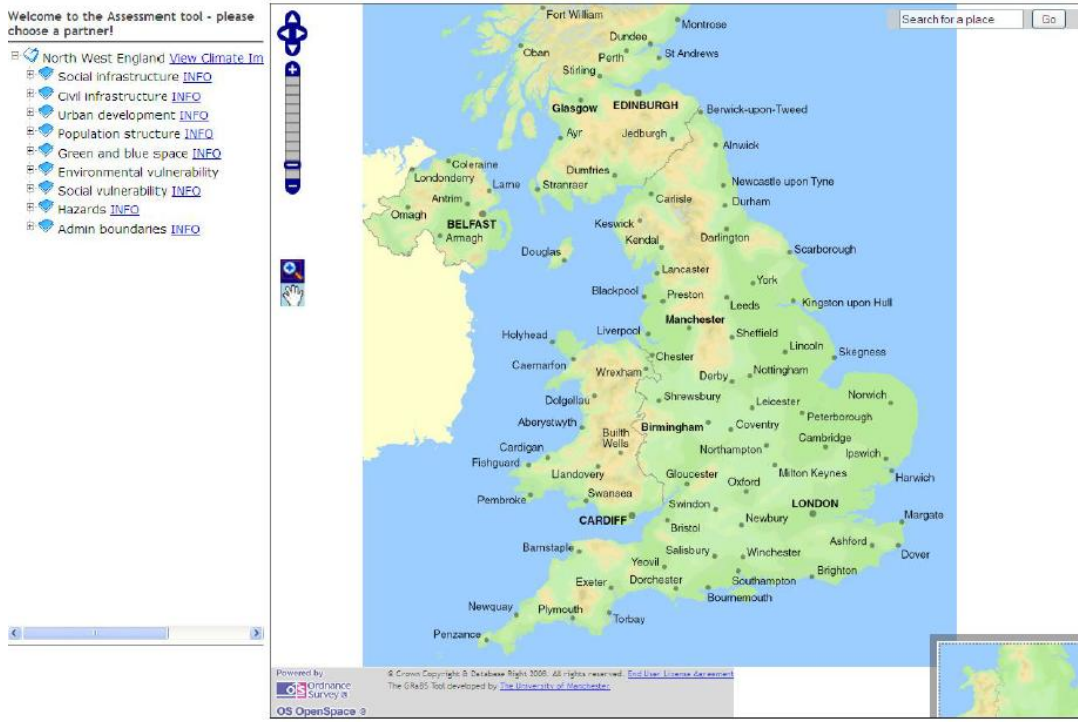
West Cheshire and Chester: Significant Weather Events 1994 - 2009



- Green Infrastructure Resources & Information

The GRaBS project, working with the University of Manchester, has developed vulnerability assessment tool, to aid the strategic planning of climate change adaptation responses, with a particular focus on flooding and heat stress. The Tool assesses the vulnerability of urban areas to climate change impacts, with an additional assessment of relative patterns of spatial risk. This has been used in community meetings to visualise vulnerability, exposure and climate hazards within their location.

Mapping Tool



STAR tools

Surface temperature and runoff tools for assessing the potential of green infrastructure in adapting urban areas to climate change

Step 1: Define your study area(s)

Surface temperature tool

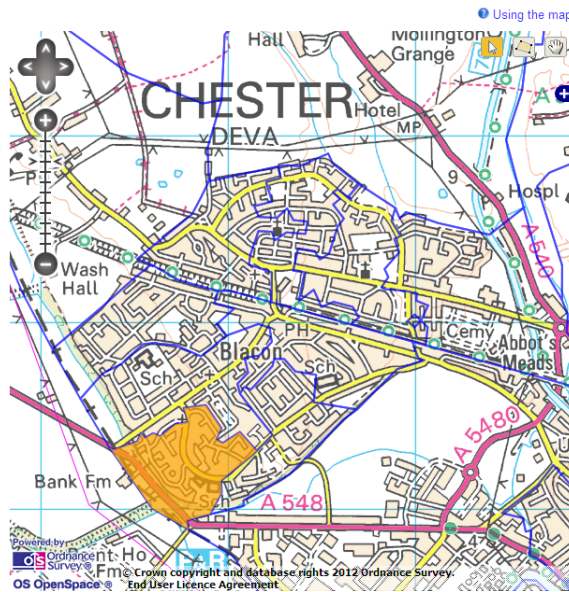
Complete the two steps below to define your study area(s). Please note that study area(s) cannot be saved between sessions (e.g. if you do not run the tools before you close your web browser).

1.2 Add the boundaries that you want to select your study area(s) from to the map

- Add predefined boundaries
 - Wards
 - Lower Layer Super Output Areas
 - Grid squares
- Upload your own zip file containing shapefile boundaries
- Draw boundaries straight on to the map

1.3 Select your study area(s) from the boundaries you added to the map in step 1.2

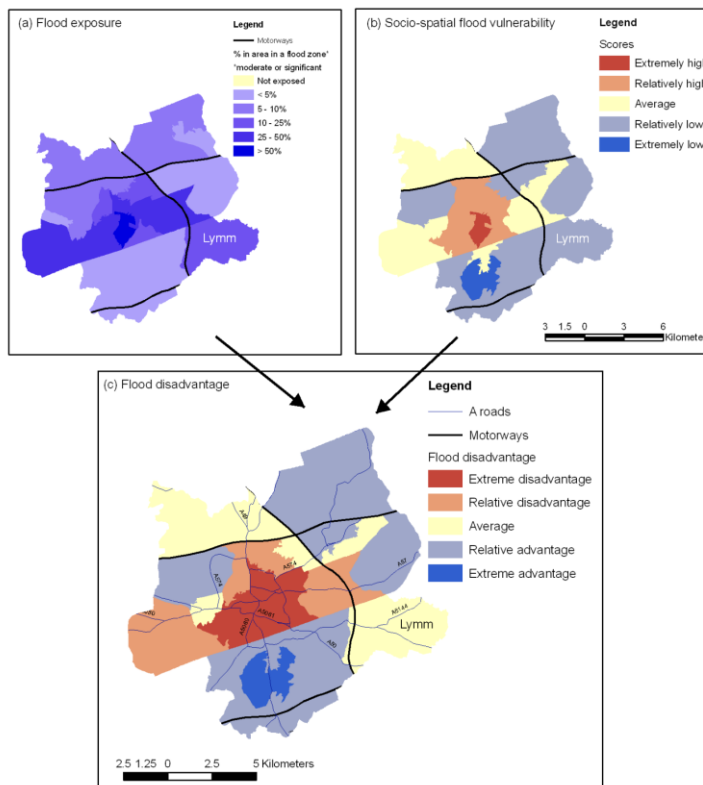
- Select your study area(s) manually
- Select all predefined boundaries within a local



- Justice, vulnerability and climate change: Socio-spatial flood vulnerability

This research study, funded by The Joseph Rowntree Foundation, undertaken by a team from the University of Manchester and the University of York, provides a framework for analysing ‘social vulnerability’ to the impacts of climate change through spatial analysis of:

- the likelihood and severity of the weather related event – flood, heatwave, and
- vulnerability: the conversion of the event into the welfare impacts (individual, social and environmental)





Feedback from the Stakeholder workshop, held on 5th March 2012, raised the following issues:

- Data – Good idea (Never to much data)
- How is data going to be communicated? Targets set/financial obligations
- Involve large organisations – water/electric
- Make data easily available
- Have data in concise and relevant formats
- Have community specific data which they can use - Simple and to the point data, free from jargon
- Vulnerability – People do not consider themselves vulnerable, who is vulnerable?
- What is each community aiming for? How do they perceive risks?
- Promote GRaBS (Green Infrastructure Resources & Information)

5. Transferable tools/ resources

Across Cheshire East there are already a number of Community Resilience Emergency Plans already developed based on The Cabinet Office template. These local plans cover at risks from a range of emergencies, but do include Floods (rivers, canal breach), High Winds, Severe Snow and Ice, Subsidence, Air Pollution as well a major chemical/ traffic/ plane incidents etc. These plans are proposed to be developed across Cheshire West and Chester over the next year. However, few plans look at mitigation measure to increase community resilience to climate changes.

Middlewich Town Council

Community Resilience Emergency Plan

Remember, it is vital that in the event of an

EMERGENCY SITUATION

the initial action is to

Dial 999

www.cheshireeast.gov.uk
www.middlewich.org.uk

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High winds	Structural damage to buildings and residential properties Potential temporary evacuation of residents Potential Homelessness Need urgently to secure and make safe property	Identify premises for forward control use by emergency services CEC have identified Rest centres and have designated Rest Centre/evacuation plans, this plan identifies other premises that are available Prepare list of local building contractors
Severe snow and ice	Housebound vulnerable residents unable to obtain supplies	Identify housing occupied by vulnerable residents Prepare a list of voluntary agencies and individuals to deliver essential services
Chemical spill/explosion/fire	Potential structural damage to houses and other buildings, atmospheric pollution	Identify premises for forward control use by emergency services. Prepare list of local building contractors
Major Traffic incident A500/M6	Gridlocked traffic in and out of Parish. Residents unable to go to work/school.	Identify areas where stranded motorists can be accommodated if requested
Subsidence	Structural damage to buildings and residential properties Possible homelessness	Prepare list of local building contractors CEC have identified Rest centres and have designated Rest Centre/evacuation plans, this plan identifies other premises that are available

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Feedback from the Stakeholder workshop, held on 5th March 2012, the following issues were raised on the template:

- Good idea for a starting point – look into flexible/tailored to specific area tool kits (one size doesn't fit all).
- What is the pull/motivation for communities? LA's?
- Need to overcome fear issues if communities are at risk, deal with it and prevent.
- Who will own plans of what to do in a emergency
- Introduction – explanation (keep it simple)
- Guidance for LA on how to articulate their responsibilities and support communities
- Focus on planning/ preventing and mitigation rather than recovery

Following meetings with low carbon groups in Cheshire and Warrington, the following toolkit structure was agreed as a way forward:

- **Why:** Moving towards a Climate Resilient Community, prepared for the changes in climate that will occur, community prepared and resourced, has the capacity and knowledge to ensure their community is capable of dealing with extreme weather events, energy shortages, breakdown of public support processes, etc.
- **Who:** knowing your community, groups, vulnerable people, resources, skills, aka snow angels, communication pathways, into the community from support agencies, out to others, within the community
- **What:** critical infrastructure etc, transport and energy especially, but also food/ water supplies, waste/ sewage systems, fuel, civil order, shelter points
- **Where:** natural geographical community, but indirect effects from events outside the area, e.g. closure of motorways, flooding elsewhere, knock on effects...
- **When:** timescales of climate change, data, maps etc
- **How:** action plan
 - Level 1: Awareness,
 - Level 2: Capacity Building/ Group Development,
 - Level 3: Community connected,
 - Level 4: Plans in place for extreme events
 - Level 5: Mitigation underway to reduce the effects of climate change

Each group is now developing their own Climate Resilience Plan based on The Cabinet Office's template, but modified in line with the above structure. These plans will also include historic local/ personal information/ recollections of events through photographs etc, as well as short/ medium/ long term mitigation plans to increase each community's resilience to climate change 'events'.

Additionally, as part of this project, each community will be working with their local business to ensure that supplies/ resources and skills can be mobilised in case of extreme weather etc. and also local businesses are themselves have resilience plans in place. This may be 4x4's etc, first aiders, basic food supplies, fuel etc. This will address local business resilience and vulnerability through developing business continuity processes and resilience which is vital to businesses across Cheshire and Warrington. It will also help them understand their role in the resilience of the wider communities within which they sit. In addition, the project will be working with the LEP, the sub-regional Carbon Reduction and Sustainability Commission and with Groundwork Cheshire through their ENWORKS programme on resource efficiency and business continuity.

As a result, this project will catalyse action within already identified communities, in a way which builds on existing momentum and networks/ resources. However, this is the start of a process which is future focussed and has **longevity**. The development of a replicable set of tools and processes around engagement, will greatly improve the resilience of other communities and their ability to improve their own resilience capacity more widely. This will start to deliver a sustained and longer term embedded capacity within both the project area and beyond.

6. Low Carbon Communities/ Case Studies

Starting with key Low Carbon Communities, a number of meetings have been held to engage communities in developing climate resilience plans. Each meeting has been attended by 8-10 key community representatives e.g. local council officer, members of low carbon group, councillors from local council, councillors from parish council, members from environment/ heritage group or similar.

The cross section has helped broaden out interest in the work and provide an excellent reporting-back mechanisms into bodies such as local parish councils. Each community meeting has followed a similar format:

First meeting:

1. Introductions
2. Aims of 'session'
3. What are climate resilient communities?
4. What are the issues we need to consider?
5. Past extreme events, floods, heat waves, storms etc
6. Geographical issues within the community, issues outside and knock-on effects
7. How well do we know our community, vulnerable people/areas?
8. Information and support needed
9. Next steps?

Second meeting:

1. Introductions
2. Aims of Session 2
3. Parish Council feedback
4. Community Emergency Plan Toolkit
5. Village Directory
6. Village gathering of groups
7. Next steps?

Each meeting has been very well received, largely because each community has an interest in taking local action on climate change, but also understands how vulnerable their community is to long term effects of climate change. As stated above, all groups have come together over the last few years to look at climate change 'mitigation' measures (energy, food, transport).

Key messages from the meetings:

- *it is vital not to scare people or to affect the value of their homes by identifying them as particularly at risk*
- *this is about preventing the events happening and dealing with them as and when they happen*

- *how resilient is our community to climate-related shocks, with particular reference to recent and past snowfall events*
- *some of the work through the Low Carbon Group could be helpful i.e. sources of local food*
- *local knowledge of past events is important: tree roots blocking drains, ageing trees can be vulnerable to high winds*
- *there are a lot of people in and around our community who could be called on if there was a need, helping our community to help itself*
- *at present there is no mechanism for their help to be recruited*
- *other skills that might exist in the community and whose help could be called upon might include electricians, plumbers, doctors, first aid, pharmacists etc*
- *the natural group to set up such a mechanism is the Parish Council*
- *potential for a 'parish directory' as well as an annual meeting of all community groups*
- *a local leaflet should be produced with advice and emergency numbers*
- *what can the community do; what is the responsibility of the emergency services, where would the community fit in?*
- *questions that we would like answered that will help us decide how resilient our community actually is – such as where are the food shop's supply chains, how vulnerable are they? Will the local pumping stations for fresh water and sewerage work without electricity? We need to think about what data we want and where we can get it from*
- *agreed that we have many of the components required to make such an initiative a success, but that the co-ordination mechanism wasn't in place yet. Agreed that this would be raised at the next Parish Council meeting*
- *agreed that although the Low Carbon Group would be able to assist, this should be a cross-community initiative ideally owned by the Parish Council*
- *agreed that the initiative needs a 'snappy' title that does not mention climate, emergency, environment or similar, to avoid alienating certain groups who might otherwise see a benefit*
- *good to collect some images to show past events such as the heavy snows*
- *suggested that it would be good to start involve a wider range of participants including representatives from other community groups*



7. Cascading learning, driving wider change

Over the last few months, the project has gained a lot of interest both within Cheshire and Warrington and across the North West. Presentations have been delivered to a range of audiences, including the national Low Carbon Communities National Conference in January 2012 and the North West launch of the National Climate Change Risk Assessment launch in March 2012.

On 5th March, 2012, a major stakeholder workshop was held for Cheshire and Warrington key contacts and delivered the following aims:

- Introduce to Climate Resilience Communities project
- Provide the policy context for this work
- Explain the sources of data on vulnerable individuals and communities
- Hear the progress of existing work in this area
- Discuss how this work fits into a wider programme of Resilience
- Agree how this work promoted across the sub-region and beyond

Over 40 people attended the session, which included a series of presentations from the following:

- Adapting to Climate Change Programme: Rob Hitchen, (Department of Environment, Food and Rural Affairs)
- Climate Resilient Communities project: Peter Bulmer (Cheshire West and Chester Council)
- Data on our vulnerable communities: Sarah Lindley (University of Manchester)
- Climate Change Adaptation: Green Infrastructure Resources & Information: Susannah Gill (Mersey Forest)
- Community Resilience Plans: Martin Grime (Cheshire East)
- Snow Angels: Cathy Boyd (Strategic Partnerships Consultancy Ltd)
- SOS Lymm: Richard Pearce (Low Carbon Lymm)

In addition, smaller groups discussions covered:

- The data available: too much, too little, how will groups use it, data sharing issues?
- Tool kit ideas/booklet template?
- Phase 2 ideas beyond end of march/wider sharing?

Feedback on the first two bullets points has been outlined above, but for the third point, the following feedback was given:

- What is the role for L.A's, Fire, and police? – Where start/end
- Pilot schemes – places/people
- Raise awareness of schemes and accessibility
- Leaflets made for different communities – specific (case studies from neighbouring towns so people can relate)
- New sectors – Parks, gardens and highways use the data
- Simple terms – don't connect it to climate change
- Resources available – Parishes, ask them to consider issues and start doing things
- Messages to communities – Trusted sources/networks – face to face
- Eco schools adaptation plan

This embedding will build upon the Low Carbon Community Network across Cheshire and Warrington which is underpinned by the principle of sharing and collaboration. While the initial project is working with a limited number of groups, presentations/ workshops will be held with the network of Low Carbon Communities across Cheshire and Warrington, (40+) as well as presentations to the Cheshire Association of Local Councils (CHALC: 200 Parish Councils) over the next few months. The groups worked with so far have a strong relationship with their Parish Council and therefore cascading the approach out to unparished areas will provide its own challenges, especially in the urban core areas.

However extra resources will need to be secured for a major roll out and discussion with funders such as the Lottery and their Sustainable and Resilient Communities programme would be beneficial.

Also, this project will also work with the NW's Climate Change Local Area Support Programme (CLASP) in 2012/13. The key outputs and learning will be available via the sub-regional pages on this website and opportunities will be developed to actively promote this project. These will use the extensive networks available to CLASP for newsletter and event promotion (up to 4000 individuals). Currently CLASP has delivered direct support services for over 800 local authority officers, provided over 4000 person-hours of training and workshop sessions for LA & other public sector officers and over 200 hours of development sessions for LA members.

It is also envisaged that a DVD toolkit will be produced and in anticipation of this, various community and stakeholder meetings have been filmed, along with individual interviews over the last few months. Consequently there is a large stock of initial footage which documents the process so far. More filming will be undertaken as the project progresses and when produced, it will be one of the key resources to support others in implementing (learning by showing the story). While this work is outside funding on this project, it is hoped that that a DVD will be produced in June/ July 2012.

Contact has also been made with:

- Durham University through their BIOPICCC (Built Infrastructure for Older People's Care in Conditions of Climate Change) and invited to attend their workshop in May 2012
- National Council for Voluntary Organisations (NCVO) and their Vulnerable People and Climate Change Project

8. Recommendations

- DEFRA, EA and CWAC look to build upon the work outlined above
- Continue to raise awareness of the project locally and nationally
- Engage different communities through a range of techniques: leaflets, presentation, website etc.)
- Secure extra resources to expand the programme
- Develop examples of physical adaptation projects

9. Contact

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