A Step Forward: Adaptation to Climate Change

Climate North East...

a part of the Climate UK family...

Adrian Hilton
Climate North East

• Broad partnership
• Works across business, local government and communities
• Coherent evidence base
• Effective communications
• Effective and extensive networks
• Mitigation and Adaptation
• Provides functions of a Supporting Structure for CoM
• Part of the Climate UK ‘family’
Climate UK

- Climate South East
- Climate South West
- Sustainability East
- Climate East Midlands
- Climate North West
- Your Climate
- Climate North East
- Sustainability West Midlands
- London Climate Change Partnership

- + Devolved Administrations
The North East of England

- 4 Counties
- 12 municipalities (Local Authorities)
- All ‘Unitary’
- Borders Cumbria, North Yorkshire and Scotland
Varied size and nature of the 12 municipalities
How we started….

- No detailed picture of how climate might impact the region
- No robust emissions inventory nor understanding of policy implications
- Economic implications of climate change for the region unknown
The ‘Bottom Line’ - what we needed to deliver

- Enhanced resilience of our infrastructure, communities and business and natural environment to climate change
- Reductions in Greenhouse Gas (GHG) emissions of 80% - by 2050
- Opportunities for competitive advantage and economic diversification realised
What is Climate Change Adaptation?
- measures to moderate and cope with climate change impacts
- not a one-off activity, but a continuous and incremental set of activities.

- **Physical actions e.g:**
  - raising the height of sea defences
  - Increasing ventilation / cooling in buildings

- **Building ‘Adaptive Capacity’ e.g:**
  - Raising awareness of impacts
  - Tools / context etc for decision makers
Establish exposure to past / current climate
What can we expect in our region?

- Changing weather patterns
- Warmer, wetter winters
- Hotter, drier summers
- Reduction in soil moisture in summer
- Increase in ‘high intensity’ rainfall events
- Polarisation of rainfall
- Higher incidence and severity of storm events
- Changes in biodiversity
- Changing patterns of public usage – natural environment
Developing the case for action....

- Establish current exposure
- Identify key vulnerabilities
- Carry out Local Climate Impact Profiles (LCLIPs) or similar process.
- Review of current / past exposure / vulnerability
- Provide data / narrative as basis for discussions with service / asset managers
- Dialogue to establish sensitivity
Establish likely impacts of future climate change......
Resolution...
Issues...

Does not consider:
- Altitude
- Topography
- Proximity to coast etc

Gives:
- Broad, generic data –
- Warmer, wetter winters
- Hotter, drier summers
Climate Change Adaptation in the North East…
3 Data Resolutions…….
Climate Change (2050s)...
Impacts...

- Areas at risk of flooding from rivers, streams or the sea;
- Flood and coastal defences;
- Foul and surface water drainage systems;
- Groundwater flooding and minewater breakouts;
- Water resources and supply;
- Electricity network;
- Gas supply network;
- Telecommunications network;
- TV and radio transmitters and centres;

- Rail and Metro network;
- Road network;
- Fuel storage and distribution infrastructure;
- Road and rail bridges;
- Road and rail embankments and cuttings;
- Public buildings and business parks;
- Vulnerable populations;
- Residential housing;
- Port facilities; and
- Emergency planning.
Earwig modelling…

*Does consider:*

- Altitude
- Topography
- Proximity to coast etc

*Gives: (caveat)*

- High resolution
- Considerably more detailed
- Allows understanding of impacts at a level that enables **ACTION**
Why choose the 2050s?

- Climate change is already happening
- Stopping GHGs today will not prevent it
- CC over next 30-50 yrs due to historic emissions
- Within long-term planning horizons
UK CLIMATE

2009
The change for the 2080s is very unlikely to be less than 2°C and very unlikely to be more than 5.8°C.

North East Study

2 – 2.3°C
For rainfall we could see significant summer decreases

- 2020: -5%
- 2040: -10%
- 2080: -17%

For the 2080s the change is very unlikely to be lower than -35% and very unlikely to be higher than +1%

NE England central estimate
Medium emissions

Reduced stream flow and water quality
Increased drought
Subsidence
Decreased crop yields
Serious water stress

North East Study mostly ~5% up to 10%
For rainfall we see significant winter increases.

For the 2080s the change is very unlikely to be lower than +2% and very unlikely to be higher than +32%.

North East Study: 8 to 20%
Relative sea level rise
(medium emissions, 50\textsuperscript{th} percentile)

- **2040**
  - Alnmouth: 14cm
  - Saltburn: 16cm

- **2080**
  - Alnmouth: 30cm
  - Saltburn: 34cm

North East Study

30cm
Morpeth
September 2008 - £10 million?
Building Adaptive Capacity

**Logistics:** vulnerability of supply chain, utilities and transport infrastructure

**Finance:** implications for investment, insurance and stakeholder reputation

**Markets:** changing demand for goods and services

**Process:** impacts on production processes and service delivery

**People:** implications for workforce, customers and changing lifestyles

**Premises:** impacts on building design, construction, maintenance and facilities management

**Management** implications
Emerging Legal Imperative:

- Climate Change is now regarded as ‘Reasonably Foreseeable”
- Professionals will need to explicitly address climate issues
- The Freedom of Information Act
- Both individuals and the organisations they represent may be liable
This is the solution we've devised for dealing with the flooding caused by climate change.

Burying my head in the sand over climate change is much easier now that half the world's turned to desert!
We’re getting the data – we need to use it (wisely!)
‘Resilience’ component:

- Sectoral impacts assessed
- Adaptive actions identified & prioritised
- Actions implemented

✓ ‘vulnerability threshold’ raised
✓ Improved business continuity
✓ Significant risk aversion
✓ Improved public perception
✓ Reduced future costs / liabilities
✓ Improved ‘Adaptive Capacity’
Next Steps…

Continue to support SEAP development and delivery: mitigation

National Supporting Structure?

Mayors Adapt

National Supporting Structure for Adaptation?

Building resilience: Adaptation

ClimateNE  climate uk
Climate North East - Business Support

- Dedicated Business e-zine
- Business Hub
- Connect Friday
- Accredited Resilience Qualifications
- Business Survey
- Economics of Climate Change
- Big EcoShow
- Networks
“There is no doubt that moving to a low-carbon and resilient economy offers significant commercial opportunities. I believe that Climate NE are invaluable in supporting businesses to achieve this ambition.

-Chief Executive of North East Chamber of Commerce

“Failing to adapt and build resilience will hinder our ability to realise the economic opportunities presented by the move to a low carbon economy”

-Head of Policy, NECC
80% of businesses believe climate change is real and happening.

60% affected by severe weather in last 2 years.

32% incorporating severe weather into planning.
Effects on business......
Resilience – a journey, not a destination….

…..but how to travel?

Recognition
Messaging
Peers
Experience

STANDARDS
ISO / BSI
BS 65000
ISO 22301
Etc…

Increasing resilience

ClimateNE
Resilience – a journey, not a destination....
Tools for Adaptation…

- Climate UK – significant experience in supporting adaptation across all sectors

- Severe Weather Impact Monitoring System (SWIMS) for municipalities

- Forthcoming Advanced Impact Monitoring System (AIMS)

- Business Resilience Health Check

- Fully accredited Business Resilience Qualification/s
Links…

- Climate North East: [www.climatenortheast.com](http://www.climatenortheast.com)
- Climate UK: [www.climateuk.net](http://www.climateuk.net)
- Severe Weather Impact Monitoring System (SWIMS): contact Adrian Hilton: [adrian.hilton@climatenortheast.com](mailto:adrian.hilton@climatenortheast.com)
- Forthcoming Advanced Impact Monitoring System (AIMS): contact [adrian.hilton@climatenortheast.com](mailto:adrian.hilton@climatenortheast.com)
- Business Resilience Health Check: [http://www.businessresiliencehealthcheck.co.uk/](http://www.businessresiliencehealthcheck.co.uk/)
- Fully accredited Business Resilience Qualification/s. contact [adrian.hilton@climatenortheast.com](mailto:adrian.hilton@climatenortheast.com) and see [http://www.youtube.com/watch?v=4KgXGu3pdPQ](http://www.youtube.com/watch?v=4KgXGu3pdPQ)
Here to work with you,

Thank you

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