Royal HaskoningDHV
Enhancing Society Together

client | North East Climate Change Partnership

"The first of its kind, the North East Climate Change Adaptation study is an outstanding example of the Civil engineer's modern role in serving our community in a sustainable way and draws on specialist input to lead the profession in tackling our greatest current challenge."

The Robert Stephenson ICE Award Judges

Forewarned is forearmed

Preparing the north east for tomorrow's changing climate

Having suffered extensive damage from heavy flooding and extreme gales during the past decade, public bodies in the north east of England wanted to understand how climate change would impact its people, economy and environment and how it could adapt. As a result the North East Climate Change Partnership was formed in July 2007 and called the region's public, private and voluntary sector organisations to unite to develop a shared understanding of climate change and commit to tackle the issue head on. In December 2007 the region's stakeholders including 25 councils publicly pledged to tackle climate change.

The partnership commissioned Royal HaskoningDHV to undertake a study into projected climatic impacts in the region and investigate how it could adapt. Launched in April 2008, the study became the first of its kind to cover an entire UK government region and first to make modelling projections at an improved scale of resolution.

Adrian Hilton, Regional Climate Change Coordinator said: "The North East Climate Change Adaptation Study was an important step in ensuring the region will be ready and able to cope with climate change in the future. We needed to be clear on what the changes are likely to be in years ahead, what areas will be most affected and what we need to do now, to prepare and adapt. That is why this study has been so important."

The study

Technical engineering, excellence and ingenuity

Using a model developed by the Environment Agency and Newcastle University called the Rainfall and Weather Impact Generator (EARWIG), the study operated at a 5km by 5km scale of resolution to project climate changes to the 2050s, providing 100 times greater resolution and far more detail than previous 50km by 50km modelling exercises.

The study provided detailed information on impacts and adaptation responses for transport, public services, utilities, industry and business, heritage, tourism and leisure, and covered environmental consequences, such as flooding and drainage, coastal erosion, ground and mine water. Organisations contributed local knowledge via four workshops which helped identify any recorded or anecdotal trends in weather patterns.

Forewarned is forearmed

Results

Results of the study suggest that in future the region could be affected by increased flooding, wildfires, health effects of extreme weather patterns, infectious diseases and pests, weather-related damage to roads and buildings, and the loss of business productivity. On a positive note, climate change is seen to bring new economic opportunities such as investment in new technologies which could create jobs, strengthen the economy and place the region at the forefront of the renewable energy industry.

Examples of how the region can use results of the study to adapt to climate change include:

- tree planting to provide shading benefits to buildings
- use of upland reservoirs to store water during winter months to be used for irrigation and livestock during summer months.

Sharing the study so others can benefit

Eight of the twelve local authorities in the region have included NI 188 (Planning to Adapt to Climate Change) in their Local Area Agreements. One local authority has set a target of reaching level four in the NI 188 guidance in the next three years. Information from the study is being used by local authorities to inform the development of their development frameworks and transport plans.

The study won the Robert Stephenson ICE Award for Sustainability at the Institute of Civil Engineering Awards 2009. Instrumental in launching the study, Dr Nick Cooper, director of Royal HaskoningDHV's Rivers, Deltas & Coasts division in Newcastle, said: "We are delighted with this award. It is a real recognition of the hard work that went into this pioneering study. The project success is mainly due to the excellent collaboration between the partners and the combination of state-of-the art science with the practical 'on-the-ground' knowledge and experience of those involved."

The full North East Climate Change Adaptation Study is available online at **www.adaptne.org**

Dr Nick Cooper
T: +44 (0) 191 211 1330
E: nick.cooper@rhdhv.com

00161-cs-mac-mo-rhdhv-0713-gb-v01-cwa