


YORKSHIRE AND HUMBER CLIMATE CHANGE ADAPTATION STUDY

LOCAL AREA REPORT CITY OF YORK

<p>Location</p>	
<p>Description of District</p>	<p>The City of York is in the middle of the study area. It is an urban area with a rural surrounding.</p>
<p>Future Climate Projections</p>	<p>The results of the modelling carried out for the Yorkshire and Humber Climate Change Adaptation Study suggest that the following changes are likely by 2050:</p> <ul style="list-style-type: none"> • Summer daily mean temperatures show the greatest seasonal temperature increase of 2.2°C; • The average annual maximum temperature rise is projected to be 3°C; • There will be an increase in the number of hot days during the summer (where the temperature exceeds 28°C), with an average of 3 more days per year; • Winter average winds could increase by 1%; and • The City will experience the greatest reduction in annual average rainfall across the study area, at 36mm, although winter rainfall is expected to increase. <p>These figures relate to the nearest modelled cell, which was York.</p>

Key Impacts and Adaptation Actions

Although principally a regional / sub-regional study, there are a range of issues that are of particular relevance to City of York District. These are set out below, using the same 'sector' headings as the main report. These points are not the only issues for consideration, however, and should not be read in isolation. Sub-regional and regional reports, as well as the thematic or sectoral areas of the website, do cover other issues relevant to this local authority area.

Flooding

Key Impacts

- Greater rainfall leading to increasing and more frequent flood problems for local properties, businesses and infrastructure;
- Increased erosion and more frequent breaching of historic defences;
- Traffic impacts on main routes; and
- Increased risk to highly vulnerable caravan parks and camping sites.

Key Adaptations

- Develop flood management strategies to protect local businesses and properties, or encourage flood-resilience of buildings where this is not viable;
- Protect critical infrastructure and emergency services to ensure continuation of service, or relocate away from flood risk areas;
- Produce multi-agency response plans to co-ordinate responses during extreme events and ensure clear access routes are kept available; and
- Ensure appropriate planning regulation is undertaken for caravan and camping parks with increased tourism as sites are highly vulnerable and are often placed adjacent to watercourses.

Business and Economy

Key Impacts

- Higher summer temperatures are expected to increase demand for leisure and tourism, and especially outdoor amenity over an extended tourist season. This could place significant strain on existing attractions and infrastructure;
- Sports venues, heritage and amenity sites will be affected by changing temperatures and rainfall/storm patterns which will impact grounds maintenance, building fabric, and have impacts on health. Festivals and outdoor events may become more susceptible to disruption; and
- There will be significant opportunities for the Advanced Manufacturing sector and the region's advanced technology industries in developing solutions to the challenges presented by climate change.

Key Adaptations

- Long-term changes in the tourism industry should be built into visitor management strategies, and the expected future needs and demands of increased numbers of tourists and the changing climate should be considered in infrastructure development, regional plans, and more local management regimes;
- Increased use of shade trees in urban areas will limit the heat island effect and their adoption should be encouraged;
- Greater awareness of climate change within the advanced technologies sector, and wider encouragement for the region to develop technical solutions to some of the challenges faced; and
- Through the status of York as a national Science City the City can play a wider role in ensuring climate change awareness and adaptation are considered more than is currently the case, and has a good opportunity to lead by example.

Public and Voluntary services

Key Impacts

- Much of York's social housing stock is pre-1980s and will be vulnerable to changes in structural (e.g. subsidence) and environmental forces (e.g. increased intensity of rainfall) due to climate change;
- While fuel poverty may decline during winter months, summer heat waves will make homes less comfortable, particularly for the elderly and vulnerable;
- Lower summer rainfall and higher temperatures may require altered design and management of public open spaces, particularly in relation to suitable species, the use of water and shading, and maintenance regimes.

Key adaptations

- There are significant opportunities for housing refurbishment to build in adapted measures such as insulation, as well as technologies to limit the costs and implications of dealing with future temperatures (eg low energy and passive cooling);
- Climate change adaptation activity and refurbishment could use the index of multiple deprivation to identify priority areas for action, and begin to develop community scale NI 188 assessments; and
- Planning of greenspace and green infrastructure should take full account of future climate in determining species choice, management regimes, and to understand future use of the space.

Infrastructure and Utilities

Key Impacts

- Surface melt of rural road surfaces and associated knock-on effects, such as disruption to travel and welfare provision;
- Increased number of traffic delays on major highways caused by increased winter rainfall and winter average wind speeds;
- Increased frequency of flooding from urban drainage and sewer systems in York, especially in winter;
- Increased demand on water resources;
- Increased blockage of drains, culverts and gullies; and
- Mechanical operations within the water distribution grid could be affected by climate-related disruption to power supplies.

Key Adaptations

- Allow additional resources for use of alternative road surfacing materials in carriageway maintenance programmes to ensure higher melt resistance;
- Weather and travel warnings issued to users of principal roads during storms and anticipate increased requirements for emergencies;
- Capital programs should consider improved sewer and drainage design capacity;
- Re-evaluate resources and approaches for inspection and clearance of drain, culvert and gulley blockages;
- Increased awareness of inter-dependencies between critical infrastructures, leading to improved resilience planning.

Biodiversity

Key Impacts

- Urban green space, brown field sites, and other features of the urban landscape are likely to become increasingly important refuges for some species.

Key Adaptations

- Wherever possible allow natural processes to continue, and therefore adaptation to change to occur naturally;
- Facilitate an overall expansion in habitat types currently suffering from isolation or fragmentation to improve habitat connectivity/permeability, and deliver an overall increase in area, and improved value, of urban and industrial areas as refuges.

Health and Welfare

Key Impacts

- Impacts upon mental and physical health due to increasing temperatures; and
- Effects of temperature rise on urban air quality and the subsequent effects on, in particular, those with respiratory conditions.

Key Adaptations

- Urban design to minimise the heat island effect as much as possible. New building designs, passive temperature control, renewable energy generation and use of green spaces; trees, parks, open spaces and green roofs; and
- Raising awareness, educating and building community resilience.
- Also gain a better understanding of the factors causing out-migration to rural areas by elderly people to assist in planning future delivery of services.