


YORKSHIRE AND HUMBER CLIMATE CHANGE ADAPTATION STUDY

LOCAL AREA REPORT SELBY DISTRICT

Location	
Description of District	<p>The district of Selby is a rural area, and previously contained a significant coal-mining complex. The prime industry is agriculture. The nearest significant urban areas are the cities of York and Leeds.</p>
Future Climate Projections	<p>The results of the modelling carried out for the Yorkshire and Humber Regional Climate Change Adaptation Study suggest that the following changes are likely by 2050:</p> <ul style="list-style-type: none"> • The annual maximum temperature will increase by 3°C; • Summer average temperatures are expected to increase by 2.2°C; • The district will see one of the greatest reductions in annual average rainfall in the study area (36mm); • Winter rainfall increases by 15%; and • Annual snowfall days are projected to reduce by 60%. <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 the Selby 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 in main towns, particularly in Selby and surrounding towns;
- Increased tidal-related flooding impacts due to rising sea levels which will impose greater loading on tidal defences;
- Increased erosion and more frequent breaching of historic defences requiring increased maintenance works; and
- Traffic impacts on main routes impacting on the co-ordination of emergency services, business deliveries, residents' access, and the provision of critical council services.

Key Adaptations

- Protect critical infrastructure and emergency services and implement flood resilience measures to ensure continuation of service, or relocate assets 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
- Concentrate flood management on protecting local properties rather than defending solely agricultural land. Consider wide range of flood management strategies to protect local businesses and properties.

Business and Economy

Key Impacts

- Increases in pest and disease spread, together with the potential for more 'exotic' species and increased vulnerability of livestock;
- Digital industries will be particularly vulnerable to effects on telecommunications infrastructure, and to the effects of increased flooding on data storage and electrical services;
- Impacts of climate change on the built environment, in particular business premises, will have a significant effect on employee and customer wellbeing.

Key Adaptations

- Promote and circulate research developments into the likely impacts of climate change on, in particular, agricultural and livestock management. Encourage early adoption of adaptive management strategies, including water storage and shelter provision, in order to build agricultural resilience;
- Initiate, develop and review pest management strategies, in particular in those rural areas frequented by visitors, to ensure the early identification and treatment of any identified species or conditions;
- Raise awareness of the impacts of climate change among the digital industries, and those business sectors heavily reliant on data transmission and storage, and ensure that networks and transmission infrastructure is adequately designed;
- There is potential for expansion of woodland areas as part of wider catchment and flood management schemes in order to ameliorate flood risks in downstream areas; and
- Particularly bearing in mind the high levels of regeneration targeted within the district, climate adaptation should be built into all new developments to ensure working and other conditions are maintained at an agreeable standard into the future.

Public and Voluntary Services

Key Impacts

- The drying out of soils followed by heavy rainfall could lead to increased risk of subsidence and slope instability; and
- With the expected increase in winter rainfall and extreme rainfall, flooding events will become increasingly frequent and intense, impacting on social housing residents, housing association, public services and emergency service ability to operate.

Key Adaptations

- Emergency planning will need well developed communication links with the Armed Forces Units to prepare for resourcing when required; and
- Review built assets and resource availability and location to ensure resilience to future demands.

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 demand on water resources, particularly from agriculture;
- 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 programs to ensure higher melt thresholds;
- Farm-holdings to consider local winter water storage reservoirs to assist with summer irrigation or livestock watering;
- Re-evaluate resources and approaches for inspection and clearance of drain, culvert and gulley blockages; and
- Increased awareness of inter-dependencies between critical infrastructures, leading to improved resilience planning.

Biodiversity

Key Impacts

- Lowland habitats in Selby are likely to be increasingly under threat from saline contamination associated with sea level rise and coastal flooding. This could remove species across a fairly wide area to the east;
- Selby is relatively flat and low lying and water stress could therefore be enhanced with associated impacts on species; and
- There is likely to be a change to water and wetland habitats as a result of hotter drier summers and increased rainfall in winter. Water levels are likely to decline in summer drought, with water becoming warmer and more enriched, leading to the increasing disconnection of aquatic habitats.

Key Adaptations

- Wherever possible allow natural processes to continue, and therefore adaptation to change to occur naturally;
- An overall expansion in habitat types currently suffering from isolation or fragmentation, to improve habitat permeability. The overall connectivity of existing and newly created habitats needs to be enhanced to enable species to migrate and disperse as easily as possible; and
- Maximise the potential for different habitats and species to help sustain each other. New habitats may take on functional roles such as buffering natural hazards such as wind, flooding and drought; and

Health and Welfare

Key Impacts

- Impacts upon mental and physical wellbeing as average summer temperatures increase and people; growing incidences of heat stress, sunstroke, exhaustion and dehydration; and
- Increased likelihood of flooding due to greater winter rainfall totals and heavier individual rainfall events.

Key Adaptations

- Building, and enhancing existing, networks of support and healthcare services to cater for an increasingly elderly population;
- Raising awareness, educating and building community resilience; and
- Encouraging rainwater capture and harvesting and other larger-scale flood preparedness work with vulnerable communities