

Physical environment and climate change

Headlines

The world's climate is changing because of increased carbon dioxide in the atmosphere. This will affect the health and wellbeing of people across Kirklees.

The health of vulnerable people could be challenged by heat stroke, hypothermia, musculoskeletal problems and respiratory infections.

Reducing emissions requires action across energy use in the home, transport and land use and the natural environment.

More than 1 in 4 households in Huddersfield Central and Dewsbury experienced fuel poverty in 2010. Not surprisingly fuel poverty is most common in back to back houses, especially for those on the lowest income. The majority of journeys are by private car and whilst there is some evidence of increased public transport use the over reliance on the car still represents a major threat to not only climate change but a range of other health and wellbeing issues, especially obesity and accidents.

Why is this issue important?

Climate change presents unprecedented and potentially catastrophic risks to health and wellbeing including;

- Increased deaths, disability and injury from extreme temperature and weather conditions.
- Health hazards from chemical and sewage pollution.
- Increased respiratory problems from the damaging effects of surface ozone.
- Increased skin cancers and cataracts.
- Effects on mental health of flooding and other climate related events¹.

This is not only a global issue but also a local one. Projections for Yorkshire and the Humber show that these changes will lead to increased temperatures, decreased summer rainfall and increased winter rainfall over the next 80 years².

The major impacts of these changes for Kirklees by 2050 will include:

- Increased flooding (winter and summer high intensity surface water run-off).
- Increased storm intensity and frequency.
- More heat waves. Average daily temperature increase by approx 2.3°C.
- Drought problems. Decreases in summer rainfall by 19%.

In Kirklees we have seen an increase in extreme weather events. The effects caused by this have included:

- Storm damage to properties in parts of Kirklees, with wind speeds up to 90 mph in November 2009. The strong winds and heavy rainfall resulted in severe flood warnings and disruption to transport.
- Snow and ice during January, February and November 2010 which disrupted the transport network and caused traffic congestion. It also disrupted local authority services, such as bin collections, and affected health services due to the cancelling of all routine and non-emergency appointments.
- Severe flooding in the summer of 2007 with up to 100mm of rainfall in 24 hours.
- Heat waves in Kirklees reaching record highs of 31°C in the summer of 2003.

Creating a sustainable future is entirely compatible with action to reduce health inequalities. Sustainable local communities, active transport, sustainable food production, and zero carbon houses will have health benefits across society^{3(p18)}.

What significant factors are affecting this issue?

Human activity is now widely agreed to be the cause of the rapid and unnatural changes in the climate, due to the amount of greenhouse gases produced, especially carbon dioxide (CO₂, often shortened to carbon). During the last century the carbon dioxide level in the atmosphere increased by a third to its highest level for 100s of 1,000s of years¹.

Key to addressing the issue is the need to reduce our emissions across Kirklees and the need to adapt to the effects of climate change.

Energy use in the home

Domestic energy use contributes to climate change and accounts for 38% of energy use in Kirklees. About two thirds of domestic use is for heating and hot water, with more than half of heating being lost in poorly insulated homes².

When a householder spends more than 10% of their income on energy bills, they are considered to be fuel poor, so that they cannot afford to heat their home properly. This results in living in cold, damp housing which can cause or aggravate serious health conditions, especially in the old and very young^{3(p80)}.

The Kirklees Warm Zone programme has helped to address fuel poverty and climate change by offering help to every household locally to improve energy efficiency within the home. By the end of July 2010, Warm Zone had reached 135,816 households of which 49,221 homes have received insulation measures (42,416 homes have had loft insulation and 20,948 cavity wall insulation).

Transport

In Kirklees, transportation accounts for 20% of CO₂ emissions². There is some evidence to show increasing public transport use (rail journeys are rising by around 8-10% per annum, but bus travel across West Yorkshire is falling). However, private cars are used for the majority of journeys in Kirklees. In 2008⁴:

- 72% of journeys to work were by car, of which 11% were with another adult, 7% with a child.
- 18% of journeys to work were by public transport.
- 9% by walking and cycling.

Land use and the natural environment

As increasing oil prices push up the cost of food, concerns over food security (the availability of food and a person's access to it) and food poverty are rising. Developing sustainable food systems such as community gardens, allotments, city farms, smallholdings, community supported agricultural (CSA) schemes and land trusts all are required even more.

Which groups are affected most by this issue?¹

A changing climate will affect all our communities and will have significant implications on some key individuals in Kirklees. The obvious risks are short term to the health of vulnerable people, for example older people, people in poor housing conditions, people with long term health conditions and infants. Such risks are heat stroke on hot days and hypothermia on extremely cold days. Very wet weather and cold winters also exacerbate musculoskeletal problems and levels of respiratory infections, as well as leading to excess winter deaths. In the long term, food poisoning, disease threats and more insect borne diseases could also be exacerbated due to an increase in summer temperatures and milder winters. The effects of flooding can have a major impact on people's lives, including the dislocation of people and the need to re-home and deal with the aftermath of a flood.

Where is this causing greatest concern?

Flooding

The Kirklees Strategic Flood Risk Assessment identified and analysed current and future broad scale flooding issues for key locations in Kirklees, such as along the River Colne from Huddersfield to Dewsbury. It provides support for further assessment of planning applications and proposed development allocations within those areas⁵. Assessment of reservoir stability is also undertaken.

Fuel poverty⁶

The lowest energy efficiency ratings of homes across Kirklees are found in those built pre 1919 which includes many terraces (both back to back and through terraces) located mainly in older urban areas and stone cottages and detached houses in more rural areas. Very few homes pre 1919 have a cavity wall and some do not have a loft and are considered 'hard to treat' homes.

One in 3 back to back houses fails the thermal comfort criterion of the Decent Homes Standard. Nearly three times as many back to backs have a SAP (Standard Assessment Procedure for Energy Rating of Dwellings) rating of below 35 (20% compared with 7.5% of the housing stock as a whole). Very few back to backs (0.5%) had a SAP rating of 65 or over. (SAP 65 is taken as the default energy efficiency rating above which homes are taken out of fuel poverty). Just less than 36% of households in back to backs had an income of under £10,000pa compared to just over 24% for the whole private sector stock across Kirklees.

Views of local people

In 2009, a climate change attitudes survey was carried out across Kirklees in which the survey sample was self-selecting so not necessarily representative of Kirklees⁷. Even so:

- 74% thought that their everyday actions contributed to climate change.
- Future impacts such as flooding, increased rainfall and increased poor air quality were of higher concern than hotter and drier summers (which were often perceived as a positive impact).
- Females were more concerned about climate change than males.

What could commissioners and service planners consider?

- Improving energy use and efficiency across the domestic sector, including greater investment in, and public awareness of, renewable energy production.
- Transport behavioural change is urgently needed. The reliance on the private car in Kirklees, because public transport is seen as expensive and/or unreliable, must be addressed.
- More work is needed to ensure that Kirklees is fully prepared for the effects of flooding as much of Kirklees is within high risk flood zones.
- We need to better understand how we manage agricultural land, make provision for long-term affordable food security, forestry, green spaces and wildlife habitats in Kirklees to help mitigate climate change.
- Action is needed to develop further sustainable waste management practices across the business sector, reducing the amount of waste produced and maximising re-use and recycling across Kirklees.
- Collectively, Kirklees businesses and public sector organisations have the potential to make carbon (and potentially cost) savings via local sourcing or joint working.
- There is a need to develop skills for low carbon living and working locally so that communities are skilled to be able to adapt to a changing climate.

References

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