
**AYRSHIRE JOINT STRUCTURE PLAN AND TRANSPORTATION COMMITTEE
23 MARCH 2001**

An Exploration of Regional Climate Change Scenarios for Scotland

PURPOSE OF REPORT

- 1 To advise the Committee of the implications of the recently published report “An Exploration of Regional Climate Change Scenarios for Scotland”.

BACKGROUND

- 2 The Committee will recall previous papers last year on reports about the UK and the Scottish Climate Change Programmes. Although useful in setting the National and Scottish context the reports highlighted the requirement for more refined data to reflect local circumstances. The Scottish Executive has now published Regional Climate Change Scenarios for Scotland, which reveals geographical variations in monthly and seasonal temperature, rainfall and windspeed. Overall the findings are broadly consistent with research undertaken for the UK as a whole, (published in the 1998 UK Climate Impacts Programme) however they provide a ‘finer scale at which to interpret the changes’. This information could potentially inform the physical impacts of climate change such as the variations in the risk of flooding or storm damage in Scotland. This paper will concentrate on the extent to which the research informs the Structure Plan’s current exploration of flooding and the impacts of climate change in Ayrshire.

REGIONAL CLIMATE CHANGE SCENARIOS FOR SCOTLAND

- 3 In terms of regional scenarios for temperature, rainfall and windspeed the findings of the research can be summarised into three main points as follows:
 - by the end of 21st Century annual average temperatures could increase by between 2-3 C. In terms of extreme daily weather scenarios, ‘hot days’ will be more frequent with a slightly greater increase in southwest Scotland than the rest of the country. However the ‘hot days’ are more likely to occur in winter;

- annual rainfall will increase to around 20% and extreme rainfall intensities could also rise in all seasons. Summer rainfall in the west of Scotland is likely to be a higher figure than for the east coast; and
- wind speed thresholds will increase in all seasons for most parts of Scotland with the largest increase in spring.

IMPLICATIONS FOR STRATEGIC PLANNING IN AYRSHIRE

4 Although the report highlights a range of scenarios that could result in an increased threat of flooding due to storms and increased rainfall it does warn that the data is based on 'one regional model and using one greenhouse gas'. Therefore the actual results and impacts of climate change could potentially be more extreme or less certain as to their or intensity for different parts of Scotland. Committee will recall that previous papers on climate change have highlighted the need for more resolute data particularly at the coastal margin of Ayrshire. While the findings of the report require to be substantially confirmed before it can be used a comprehensive tool for daily weather scenarios, the research informs the Structure Plan's current exploration of flooding and climate change in the following ways:

- the findings of the report highlight significant changes particularly for the south west of Scotland and therefore Ayrshire will be directly affected by climate change over the coming century with potentially more rainfall and more 'hot days' in winter than the east. However, the quantifiable nature of this impact cannot be assessed due to the lack of immediate available data to inform the process and although the regional scenarios give some indication of what to expect it does not measure in fine detail the impact on the Ayrshire Coast or coastal margin as well as inland flooding matters and therefore still leaves an information gap; and
- although it is recognised that the regional climate change model has a number of limitations, (which are likely to be addressed in the forthcoming set of UK climate change scenarios to be published later in 2001), it is clear that the dialogue with key partners and the Scottish Executive requires to continue in order to participate in establishing a better understanding for use in risk assessments associated with climate change.

CONCLUSION

5 The document is a welcome vehicle to continue the debate on the issues of climate change and adds further pieces of information towards beginning to quantify the impact of climate change in Scotland. However there a number of issues in respect of the Ayrshire coast which require a more robust data background in order to develop planning policy.

RECOMMENDATION

6 That the Committee note the contents of this report.

BACKGROUND PAPERS

Scottish Executive Central Research Unit – Regional Climate Change Scenarios for Scotland.

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