

**AYRSHIRE JOINT STRUCTURE PLAN AND TRANSPORTATION COMMITTEE
22 JUNE 2001**

Climate Change: Review of Levels of Protection Offered by Flood Prevention Schemes.

PURPOSE OF REPORT

1. To advise the Committee of the implications of the recently published report “Climate Change: Review of Levels of Protection Offered by Flood Prevention Schemes” and how it informs the exploration into potential polices on flooding for the Structure Plan.

BACKGROUND

2. The Committee will recall that as a consequence of the Scottish Executive’s consultative process on the Climate Change Programmes, a timetable of research has been commissioned in recognition of the gaps in information and data to inform local authorities in their operations. The Committee is also aware that this research on more refined data has been unfolding in a series of reports that gives further information on flooding, as an impact of climate change. This paper will concentrate on the most recently published research report and how it informs the ongoing exploration of flooding in Ayrshire.

REVIEW OF LEVELS OF PROTECTION OFFERED BY FLOOD PREVENTION SCHEMES

3. The report attempts to quantify the implications of projected climate change (as given by the UK Climate Impacts Programme) on the levels of protection of Scottish rivers and coastal flood prevention schemes. The key findings of the report are as follows:-
 - in respect of fluvial flooding it is suggested that the 100-year floods could become more frequent in the future, the equivalent to 65 to 70-year floods by the 2020s culminating into 40 to 60- year floods by the 2080’s;
 - in terms of coastal flooding (using projected mean sea level rise as an assessment of future flood risk) the 1990 100- year levels are projected to be more frequent. On average they have been calculated to become between 10 to 20-year events by 2050. However regional variations are assumed in the study, with the Argyll and

Ayrshire coastline being the least affected parts of Scotland with return periods becoming between 20 to 40-year events in the same timeframe;

- the overall conclusion of the report is that existing flood prevention schemes will be eroded as a result of climate change. Although it is recognised that in Scotland there are relatively few defence schemes compared to the UK as a whole, present defences may have reached or will be at the end of their 'design' life by 2050. In terms of future coastal flood risk, defences would need to be heightened by between 10-30cm to return the degree of protection back to the 100-year flood level. There is also the suggestion that an allowance be made for climate change in all future protection schemes, however the degree to which remains inconclusive in the light of the need for further research.

IMPLICATIONS FOR STRATEGIC PLANNING IN AYRSHIRE

4. The following points can be drawn from the report:-

- it infers that the 100-year flood event is no longer a definitive basis for the flood plain. However given that more resolute data than the 100-year event is not readily available without considerable cost then this raises the matter of resources at the local level;
- much of the report's evidence is based on assumptions which conclude with a need for more detailed research. The issue of the coast and coastal margin still remain unsolved insofar as the study does not take into account the impacts of the effects of tidal surges and coastal waves or indeed the effects of climate change on coastal morphology. This gives rise to a number of concerns in ascertaining an accurate data and information source of Ayrshire's coastline. The Ayrshire Strategic Flood Appraisal group has already been exploring this area. A recent presentation to the group by the Environment Agency on LIDAR revealed a sophisticated and expensive method of data collection. However the prohibitive costs of such an exercise has led to other options being explored. Preliminary discussion has been held with the University of Strathclyde's Department of Geography (who have devised a model of the impact of coastal flooding) to run a pilot study commencing with a 10-15 Km stretch of the Ayrshire Coast. The costing of this research is currently being investigated with possible funding partners.

CONCLUSION

5. The report is welcomed in providing more resolute information for strategic planning on which to frame sound and robust policies. However to fully assess flooding, as an impact of climate change, in Ayrshire, requires further detailed information at a local level through research particularly at the coast and coastal margin.

RECOMMENDATION

6. That the Committee note the contents of this report.

BACKGROUND PAPERS

Scottish Executive – Climate Change: Review of Levels of Protection Offered by Flood Prevention Schemes.

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