Agenda Item No: 13

DRAFT GREAT OUSE CATCHMENT FLOOD MANAGEMENT PLAN – CONSULTATION BY THE ENVIRONMENT AGENCY

To:	**Cabinet**
Date:	**5 July 2010**
From:	**Acting Executive Director Environment Services**
Electoral division(s):	**All**
Forward Plan ref:	**N/a** *Key decision:* **No**
Purpose:	**To consider the County Council's response to a consultation by the Environment Agency on the Draft Great Ouse Catchment Flood Management Plan**
Recommendation:	**That Cabinet agrees the draft response set out in this report and delegates to the Acting Executive Director, Environment Services in consultation with the Cabinet Member for Growth, Infrastructure and Strategic Planning the authority to amend the response for submission to the Environment Agency by 9 July 2010.**

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1.0 INTRODUCTION

1.1 The Environment Agency (EA) is currently consulting on a Draft Catchment Flood Management Plan (CFMP) for the Great Ouse. The consultation period originally ran to 18 June 2010, however the EA recently announced that the consultation would be extended to 9 July.

1.2 The Great Ouse CFMP is a large document of more than 2,000 pages. The full Plan is available to view at:

https://consult.environment-agency.gov.uk/portal/re/flood/anglian/cfmp290310/gocfmp?pointId=1269625651926

The EA has produced a Summary Report which can be accessed at:

https://consult.environment-agency.gov.uk/portal/re/flood/anglian/cfmp290310/gocfmp?tab=files

Paper copies of the full report and summary report are also available to view in the Members' Lounge.

1.3 This report describes the background to the Plan, its aims, objectives and methodology (Sections 3 to 6). Section 7 considers its findings as they relate to Cambridgeshire and Section 8 describes the policy options being proposed for the County. Section 9 presents conclusions and summarises the proposed response. The full text of the response is given in Appendix A.

1.4 Following consideration by Cabinet, it is proposed that the draft response in Appendix A be agreed by the Acting Executive Director, Environment Services in consultation with the Cabinet Member for Growth, Infrastructure and Strategic Planning and submitted to the Environment Agency by the new deadline of 9 July.

2.0 GROWTH AND ENVIRONMENT POLICY DEVELOPMENT GROUP (PDG)

2.1 A proposed response to the consultation was considered by Growth and Environment Policy Development Group on 19 May. PDG members raised the following points:

- There were serious concerns expressed about the implications of the CFMP for the people of Cambridgeshire and for the County Council's resources.
- Developments upstream (such as at Bedford and Milton Keynes) continue to have an effect on flood management in Cambridgeshire.
- It was questioned whether using flood storage areas in the Great Ouse River corridor was feasible as a way to manage flood risk.
- There were concerns expressed regarding the level of increased risk for St Ives identified in the CFMP, given that £8 million had recently been spent on flood alleviation in St Ives, Fenstanton and the Hemingfords.
- It was commented that the rationale for prioritising schemes by the Environment Agency was often unclear.

- It was commented that the CFMP should not focus too narrowly on main river flooding but should also include the impact of flooding from other sources, such as the Middle Level and smaller tributaries.
- It was questioned whether dredging had been properly considered as a means of alleviating flood risk.
- It was noted that the Nene catchment had its own CFMP and that the consultation on this plan had been poor, as had consultation on an earlier draft of the Great Ouse CFMP.
- It was noted that telemetry was installed along the river, but evacuation of the Great Ouse was only possible when the tide was out, and pre-emptive lowering of river levels was dependent on the quality of weather reports the EA received.

2.2 In summary, serious concerns were expressed about the CFMP and it was recommended that a strong response be submitted to the Environment Agency.

3.0 BACKGROUND

3.1 Catchment Flood Management Plans are designed to assess inland flood risk and the EA is intending to prepare 77 in total across England and Wales. CFMPs consider flooding from rivers, ground water, surface water and tidal flooding, although it is acknowledged that coverage of surface water and ground water flooding will be limited due to a lack of information. (Coastal flooding is addressed in Shoreline Management Plans).

3.2 It is intended that CFMPs will help the EA and partner organisations understand the current scale and extent of flood risk and how this is likely to change over the next hundred years. They are intended to inform decisions on flood protection, emergency planning, spatial planning, land management and conservation, as well as help Internal Drainage Boards, water companies and other businesses manage risk and plan their investments.

3.3 CFMPs are strategic documents and are designed to set out broad policy rather than identify the need for specific projects. CFMPs are designed to work with natural processes and manage land and rivers in a more sustainable way. CFMPs reflect a change from an approach of flood prevention to one of flood risk management, which recognises that, in some places, constructing and maintaining flood defences will not be technically, economically or environmentally feasible.

3.4 The Great Ouse CFMP stresses that current flood risk management activity may be based on historic decisions that may not have been reviewed recently. The Plan also emphasises that difficult decisions will have to be made about prioritising investment to where it is most needed.

4.0 GREAT OUSE CATCHMENT

4.1 The Great Ouse catchment covers an area of 8,596 km^2 from the source of the river in Northamptonshire to the Wash, and includes the rivers Cam, Lark,

Little Ouse and Wissey. The catchment has a population of around 1.7 million people; key towns and cities include Milton Keynes, Cambridge, Bedford and King's Lynn, as well as the smaller settlements of St Neots, St Ives and Ely. The catchment is predominantly rural, with a large proportion of high quality agricultural land and a number of international and national sites of environmental importance.

4.2 The CFMP examines river, ground water, surface water and tidal flooding. Tidal flood risk is considered up to the tidal limit of the river at Brownshill Staunch near Earith. The downstream limit is near the confluence with Babingley Brook, at the boundary of the Wash Shoreline Management Plan (SMP). The Wash SMP deals with coastal flooding management.

4.3 Cambridgeshire is located centrally within the Great Ouse catchment. The CFMP covers most of the County, although some parts of northern Fenland and Huntingdonshire are within the area covered by the River Nene CFMP, which was published in 2008.

5.0 AIMS AND OBJECTIVES OF THE PLAN

5.1 The overall objective of the CFMP is "to develop sustainable policies for managing flood risk in the future which may be as a result of climate change, as well as changes in land use and land management". Its aims are to:

- reduce the risk of flooding and harm to people, as well as the natural, historic and built environment;
- increase opportunities to work with natural processes;
- support the implementation of European, national and local policies;
- promote sustainable flood risk management; and
- inform and support planning policies, land use plans and the implementation of the Water Framework Directive.

6.0 PLAN ANALYSIS AND POLICY OPTIONS

6.1 The CFMP divides the Great Ouse into seven sub-catchments. These sub-catchments are then analysed to determine:

- what the current flood risks are and what flood management infrastructure is in place;
- what the likely future flood risk will be;
- the difference between current and future flood risk;
- what the catchment opportunities and constraints are;
- the appropriate policies to deal with existing and future flood risk; and
- what actions will be needed to deliver the policy proposals.

Current flood risks and flood management regimes

6.2 Section 3 of the CFMP examines historic records of flooding in the catchment, and the extent of flooding in larger settlements is mapped for the most serious floods from 1947 to summer 2007 (Section 3.2).

6.3 The extent of flood zones 2 and 3 is shown for the catchment as a whole and for key settlements within it (Section 3.3). (Zone 2 represents the area of flooding for a 1 in 1000 year event, and Zone 3 represents the area for a 1 in 100 year event. These areas are mapped without taking into account existing flood defences.)

6.4 Section 3.3 examines existing defences, the standard of protection they offer and their current condition. The broad extent of likely river and tidal flooding is then modelled for different flooding events, taking these defences into account; however it is stressed that this provides a broad indication only and does not replace the EA's existing flood maps (Section 3.4.2). An analysis of surface water, sewer and groundwater flooding is provided, although it is acknowledged that more detailed work will be needed to develop this information further.

6.5 Following this, Section 3.5 examines the consequences of flooding to people, property, infrastructure and the environment. A summary of current flood risk is then provided in Table 3.39 (pp. 317-346).

Future flood risk

6.6 Section 4 assesses likely future flood risk, taking into account how climate change, urban development and changes in land use may affect flooding over the next hundred years.

6.7 For the likely effects of climate change, 'high', 'medium' and 'low' scenarios were analysed, with the 'high' scenario reflecting a 20% increase in river flows and a 1050mm rise in sea levels, following predictions by the Department for Environment, Food and Rural Affairs (Defra) and the UK Climate Impacts Programme.

6.8 For urban development, annual requirements for housing provision in regional spatial strategies have been calculated and projected forward 100 years. For Cambridgeshire, this has been done by District, with a weighting given according to the proportion of the local authority area within the catchment. Figures are based on the published East of England Plan (May 2008). Although this produces a growth rate that is higher than historical rates, this approach has been chosen to recognise that the UK has an expanding population and significant growth is planned in the Great Ouse catchment. Given the uncertainty in projecting this figure forward over such a long time scale, high and low projections have been developed based on a rate 25% above and 25% below Regional Spatial Strategy levels. It is assumed that 60% of this development will take place on brownfield land and that housing will be developed at a density of 30 homes per hectare.

6.9 Changes in land use have also been investigated, looking at both agricultural intensification and decline. However, given the high level of uncertainty

concerning future land use change, this has not been included in the final future scenario. The analysis of climate change, urbanisation and land use change has shown that climate change will be the main influence on flood risk.

6.10 A scenario of 'high' climate change and 'medium' urbanisation was chosen to model future flood risk. It was decided that a 'high' climate change scenario reflected the best knowledge available to date and the latest Government guidance. The 'medium' level of urbanisation was chosen to reflect the fact that the Great Ouse catchment area has been identified for significant growth, but that the EA considered that levels of development above current Regional Spatial Strategy rates were not sustainable over the longer term.

6.11 This scenario has then been used to model future flood risk for a number of flood events. The extent of flooding is shown for the catchment as a whole and for key settlements within it, taking into account existing flood defences (Section 4.3). Likely impacts on people, property, infrastructure and the environment are estimated. These findings are summarised in Table 4.30 (pp. 497-528).

Comparison of current and future flood risk

6.12 Section 4.5 then compares the assessment of current flood risk with the future flood risk predicted under the scenario described above. This is done for key settlements and sub-catchments, and changes between existing and future flood risk are highlighted. Table 4.31 (pp. 530-561) sets out this comparison.

6.13 It is estimated that throughout the catchment around 40,000 people and 18,000 residential and commercial properties are currently at risk from a 1% annual probability river flood and 0.5% annual probability tidal flood. By 2110, it is estimated that around 69,000 people and more than 30,000 properties will be at risk from similar probability flood events.

6.14 The analysis highlights that the greatest flood risk in the Great Ouse Catchment is in Bedford and Kempston. However, the CFMP highlights that in the future there will be a high risk to people in St Neots and Little Paxton, with more than 6,000 people predicted to be at risk from a 1% annual probability flood. Although the EA has recently installed a flood defence scheme at The Paddocks which protects to a 1% annual probability standard, the defences will be exceeded if they are not maintained to take account of increasing water levels. There is also likely to be a proportionally high increase in the number of people at risk in St Ives, Houghton and the Hemingfords as existing defences may be overtopped during a future 1% annual probability flood.

Catchment opportunities and constraints

6.15 Section 5 of the CFMP examines the opportunities for and the constraints on flood risk management in the catchment, and the likely effects on a range of factors, including people, property, the environment, transport, tourism, agriculture and water quality.

Policy options

6.16 Section 6 then puts forward proposals for flood risk management for the catchment. Six generic policy options are considered, ranging from an option of no active intervention (option 1) to actively taking measures to reduce flood risk (option 5). An option of identifying areas to store water or manage run-off to reduce flood risk is also included (option 6).

6.17 The catchment has been divided into 25 different policy units, encompassing areas of similar catchment characteristics and vulnerability. These policy units are illustrated in Figure 6.1 (p. 591). The CFMP then presents an analysis of risk for each unit, followed by a preferred policy option and justification (Table 6.5, pp. 602-695).

Delivering the CFMP

6.18 The CFMP concludes by assessing what actions and mechanisms will be needed to deliver the policy options, which organisations will need to be involved and what the timescales will be for implementation. These are summarised in Table 7.1 (pp. 711-1036).

7.0 ASSESSMENT OF CURRENT AND FUTURE FLOOD RISK FOR CAMBRIDGESHIRE

7.1 As outlined, the CFMP assesses existing and future flood risks and the scale of disruption arising from these risks. These are classified as ‘low’, ‘medium’ or ‘high’ according to the number of people and properties affected, the economic costs and damage to agriculture and infrastructure. The findings for Cambridgeshire are outlined below.

Lower Bedford Ouse Sub-Catchment

7.2 Throughout this sub-catchment the risks from flooding are predicted to increase. For the Brampton, Huntingdon and Swavesey areas the current flood risk is assessed as low and likely to remain low in the future. For Alconbury and Alconbury Weston the current assessment of flood risk is moderate and is predicted to remain moderate in the future. Flood risk in Godmanchester, St Ives, St Neots and Little Paxton is currently assessed as high and is likely to remain high in the future.

7.3 There are significant increases in flood risk predicted for St Ives, St Neots and Little Paxton. It is estimated that in St Ives 910 people are currently at risk during a 1% annual probability flooding event, and this is predicted to rise to 3,672 in the future. For St Neots and Little Paxton, 3,979 people are estimated to be at risk during a 1% annual probability flooding event, and this is predicted to rise to 6,389 in the future.

7.4 At Houghton and the Hemingfords, where flood risk is currently assessed as low, the risk is predicted to increase to medium in the future. Currently some 300 people are at risk during a 1% annual probability flooding event, but this is expected to rise to more than 1,600 in the future.

River Cam Catchment

7.5 Given the density of population and concentration of infrastructure and property in Cambridge, the current assessment of flood risk is high and this is likely to remain high in the future, with a rise in the numbers of people affected and damage to property and critical infrastructure. Currently 986 people are estimated to be at risk from a 1% annual probability flooding event; this is predicted to increase to 1,483 in the future.

Fens – Middle Level

7.6 Fluvial flood risk in the Fens Middle Level in the future will be mainly from the Hundred Foot Drain and Old Bedford River, as well as many other drainage channels maintained by Internal Drainage Boards. Given the scattered nature of settlements and heavily managed water environment, flood risk in the Middle Level settlements of Chatteris, March, Ramsey and Bury is currently assessed as low and in the future is likely to remain low.

Fens – South Level

7.7 The Fens South Level catchment covers a broad area extending to the fringes of Cambridge. Generally throughout the sub-catchment flood risk for the main settlements of Littleport, Oakington, Westwick and Soham is low and, despite rises in the numbers of people and properties affected in the future, is predicted to remain low. The exception is at Impington and Histon, where flood risk is currently assessed as medium and is predicted to remain medium in the future. 400 people are currently assessed to be at risk from a 1% flooding event in this area and this is predicted to rise to around 430 in the future.

7.8 The CFMP identifies that the highest agricultural damage from a 1% annual probability flooding event will be in the Fens South Level due to the high proportion of Grade 1 (excellent) and Grade 2 (good) agricultural land within the sub-catchment. The CFMP recognises that flooding of the Fens could have wider implications for the local, regional and national economy, given its importance for food production.

7.9 It should be noted that although Ely is included within this sub-catchment no separate assessment is given for the City. It is not clear whether this is an omission or whether figures for Ely are included in the 'rest of sub-catchment' assessment, where current flood risk is judged to be medium and to remain at this level in the future.

8.0 PROPOSED POLICY OPTIONS FOR CAMBRIDGESHIRE

8.1 As outlined, the CFMP divides the catchment into 25 different policy units and assigns one of six generic policy options to each unit. Some of these units are small areas drawn around particular settlements; others are much broader, encompassing large areas of countryside.

8.2 There are 10 main policy units affecting Cambridgeshire and these are described below, grouped into areas where similar policies are proposed.

However, given the scale of the maps provided with the CFMP and the broad strategic nature of the document, it is not possible to ascertain precise boundaries for these units. (A plan of the policy units is given in Appendix B to this report. Colour copies of the plan will be circulated to Cabinet.)

Northern and Eastern Cambridgeshire – *take further action to sustain the current level of flood risk into the future (policy option 4)*

8.3 This area includes parts of policy units 24 (The Fens) and 17 (Houghton, the Hemingfords and St Ives) and covers all of Fenland within the catchment, the northern part of East Cambridgeshire, the eastern part of Huntingdonshire and an area of South Cambridgeshire District to the north of Cambridge.

8.4 Within this area it is proposed to take further action to sustain the current level of flood risk into the future, taking account of the effects of climate change (policy option 4). It is suggested that this be achieved through a combination of developing areas for strategic flood storage and maintaining the standard of existing flood alleviation schemes. Currently, due to the presence of defences, there is not considered to be a significantly high level of flood risk in the Fens. However, if current defences are overtopped as a result of increasing river and tidal levels, many more people would be at risk, as would significant areas of nationally important agricultural land.

8.5 Actions highlighted include the development of a Strategic Flood Storage Study to mitigate future flood risk to Houghton, the Hemingfords and St Ives. It is also suggested that a Flood Risk Management Plan be developed for the Fens, investigating how best to manage flood risk, including exploring the potential to store flood water, and a breach analysis to identify locations that are most at risk from a breach in flood defences and how this could be managed in the future, including the possibility of controlled breaching.

Southern and Western Cambridgeshire – *reduce existing flood risk management actions (policy option 2)*

8.6 This area includes parts of policy units 1 (Bedford Ouse Rural) and 18 (Eastern Rivers). It covers the southern part of East Cambridgeshire, the majority of South Cambridgeshire and the western part of Huntingdonshire District.

8.7 Within this area it is proposed to reduce existing flood risk management actions (policy option 2). However, several larger settlements within this broad area are proposed to be afforded greater protection, and these are outlined separately below.

8.8 It is argued that flood risk will not increase significantly with reduced flood risk management given the rural character of the area and dispersed population, and that adopting policy option 2 will match expenditure levels more appropriately to risk. Actions identified for this area include formulating Land Management Plans to explore opportunities for more sustainable land management and developing an Emergency Response Plan to minimise community disruption from flooding.

Cambridge City, Godmanchester, St Neots and Little Paxton – *take further action to reduce flood risk (policy option 5)*

8.9 These areas include policy units 20 (Cambridge), 16 (Godmanchester) and 13 (St Neots and Little Paxton). The Cambridge policy unit covers Cambridge City and extends out into the Cambridge fringes, including Oakington, Histon, Impington, Girton, Milton, Grantchester, Trumpington and Great Shelford.

8.10 For these areas it is proposed to take further action to reduce flood risk both now and in the future (policy option 5). It is argued that these areas are at high risk with potentially high numbers of people and properties affected. If there is no increase in flood management then it is argued that the human and economic costs of flooding will be excessive. Current preventative actions will be maintained and an enhanced level of protection will be provided in the future, through the construction and improvement of flood defences and localised small scale storage of flood waters.

8.11 Actions identified for these areas include to: develop a Strategic Flood Storage Study; develop a Flood Risk Study for Cambridge to investigate the potential to create new flood defences along the River Cam and Vicars Brook; continue with investigations for the Godmanchester Flood Defence Improvement Scheme; and develop a Flood Risk Study for St Neots examining potential for new flood defences.

Huntingdon, Brampton, Alconbury and Alconbury Weston – *continue with existing or alternative actions to manage flood risk at the current level (policy option 3)*

8.12 This area encompasses policy units 14 (Huntingdon and Brampton) and 15 (Alconbury and Alconbury Weston). It covers the towns of Huntingdon and Brampton and the villages of Little and Great Stukeley, as well as Alconbury and Alconbury Weston and surrounding farmland.

8.13 For these areas it is proposed to continue with existing actions to manage flood risk at the current level (policy option 3). Increased risk in the future as a result of climate change and urbanisation is not considered to be significantly high in these areas.

8.14 Actions identified include developing an Emergency Response Plan for people, properties and infrastructure at risk of flooding and providing local protection for the villages of Alconbury and Alconbury Weston to reduce flood risk for low magnitude events.

Great Ouse River Corridor – *take action to store water or manage run-off in locations that provide overall flood risk reduction (policy option 6)*

8.15 Policy unit 4 (Great Ouse River Corridor) follows the line of the Great Ouse south-west / north-east to Godmanchester.

8.16 For this area the EA proposes to take action with other partners to store water and manage run-off to provide flood risk reduction or environmental benefits, either locally or elsewhere within the catchment (policy option 6).

8.17 A series of locations for strategic flood storage are identified and shown on Figure 6.2 (p. 619) including from Little Paxton to Brampton (near Offord D'Arcy). It is argued that these flood storage areas will create capacity that will provide strategic benefits downstream, such as at Houghton, the Hemingfords and St Ives.

8.18 Actions identified for this area include: undertaking a Strategic Flood Storage Study examining the potential of these areas for flood storage; continuing with current levels of flood risk management in settlements and reducing flood risk maintenance activities in rural areas; and developing an Emergency Response Plan for people, properties and infrastructure at risk.

9.0 CONCLUSIONS AND PROPOSED COUNTY COUNCIL RESPONSE

9.1 CFMPs are long-term and strategic documents and it is not easy to assess the likely implications for Cambridgeshire over the 100 year lifetime of the Plan. While the Plan's broad aims and objectives can be supported, it nevertheless raises a number of important issues, including:

- How the assessment of future flood risk has been arrived at, particularly regarding the assumptions behind the amount of development modelled for Cambridgeshire and its distribution within the County, as well as the allowance for increases in net sea level rise and peak river flows.
- The policy options chosen for particular areas of the County and the likely effect these would have on people, property and the environment.
- The regard given to the historic environment, biodiversity and green infrastructure.

9.2 The County Council's proposed response is set out in full in Appendix A to this report. However, key points can be summarised as follows:

- There appears to be an error in the calculations used to predict future growth in Cambridgeshire over the period of the CFMP. As annualised figures for numbers of additional homes have been used and these have been projected forward 100 years, this is likely to have led to a significant underestimate of the amount of development in the County and so of the likely future flood risk, which may in turn have influenced the policy options chosen.
- There are serious concerns about the policy option chosen for the Bedford Ouse Rural and Eastern Rivers policy units, which cover large parts of southern and western Cambridgeshire. These options would reduce existing flood risk management actions and there is a lack of detail about how existing settlements or areas of high quality farmland within this broad area would be treated.
- There is concern over the policy option chosen for unit 17 (Houghton, the Hemmingfords and St Ives). While policy 4 would allow further actions to manage flood risk, it is considered that, given the increased risk identified, policy 5 (for "areas where the case for further action to reduce flood risk is most compelling") is more appropriate.
- The selection of policy 5 for Cambridge and surrounding areas is supported. Clarification is sought about whether Northstowe is included in this area.

- The selection of policy 4 for the Fens ("take further action to reduce flood risk") is supported, as it recognises the national importance of this area for agricultural production. However, the proposed response questions whether the flood risk implications for Ely have been fully assessed.
- It is argued that the CFMP has not had full regard to the potential impacts of flooding on the historic environment, and it is recommended that the Plan be reassessed in light of the recent publication of Planning Policy Statement 5: 'Planning and the Historic Environment'.
- Although some elements of Green Infrastructure are included in the Action Plan in Section 7, it is suggested that it needs to be considered throughout the document, as the CFMP could play a major role in helping to deliver Green Infrastructure within the catchment.

10.0 SIGNIFICANT IMPLICATIONS

Resources and Performance

10.1 The resource and performance implications of the Great Ouse CFMP are likely to be significant for the County Council as both a partner in the delivery of some of the actions identified in Section 7 of the Plan and as Lead Local Flood Authority for flood risk and water management as a result of the Flood and Water Management Act 2010. However, as outlined, the CFMP is a long-term and strategic document and it is difficult to quantify the full extent of these implications.

Statutory Requirements and Partnership Working

10.2 The actions set out in Section 7 of the Plan would require the County Council to engage in partnership working with a range of organisations. In addition, the County Council is now a Lead Local Flood Authority for flood risk and water management and will be required to discharge its duties within the framework set out by the Great Ouse Catchment Flood Management Plan and other plans and strategies.

Climate Change

10.3 The Great Ouse CFMP has been formulated to take account of the likely effects of climate change over the lifetime of the Plan and the risks these pose to people, property, infrastructure and the environment.

10.4 The intention is that the CFMP will work more closely with natural processes and move from an approach of flood prevention to one of flood risk management. In doing this there will be opportunities to improve the environment and create new habitats, and some of these are outlined in the Action Plan in Section 7 of the CFMP.

Access and Inclusion

10.5 Flooding can have significant implications for access to services and facilities. Recovery from flooding is likely to be more difficult for communities that already experience high levels of deprivation. The CFMP attempts to take into account factors such as the proportion of elderly people, people suffering from

long-term illnesses and lone parent and financially deprived households living in an area in reaching its recommended policy decisions. A 'Social Flood Vulnerability Index' has been developed and the findings of this are given in Table 3.21 (pp. 245-251) for different areas of the catchment.

Engagement and consultation

10.6 The County Council is responding to consultation on this draft CFMP document by the EA. The draft will be reviewed and a final version issued later in the year.

10.7 The County Council was not consulted on the Nene CFMP before its publication.

11.0 NEXT STEPS

11.1 It is proposed that Cabinet agrees the draft response set out in Appendix A and delegates to the Acting Executive Director, Environment Services in consultation with the Portfolio Holder for Growth, Infrastructure and Strategic Planning the authority to amend the response for submission to the Environment Agency by the revised deadline of 9 July 2010.

11.2 The EA intends to publish the final CFMP by late summer 2010. The CFMP states that an annual 'Monitoring, Review and Evaluation Plan' will be produced to assess progress against the Plan's objectives. The Council is a partner in delivering the plan, and its contribution is reported under NI185 (Flood and coastal erosion risk management) of the National Performance Framework for Local Authorities. It is stated that the CFMP will be a 'living document' that will evolve as understanding about flood risk improves. Formal reviews will be carried out to incorporate any significant changes in flood risk within the catchment, although no timescales are given.

Source Documents	**Location**
• Consultation Draft Great Ouse Catchment Flood Management Plan – Volume 1: Main Document (March 2010) • Consultation Draft Great Ouse Catchment Flood Management Plan – Volume 2: Appendices (March 2010) • Consultation Draft Great Ouse Catchment Flood Management Plan – Summary Report (April 2010)	Members' Lounge, Shire Hall

APPENDIX A: PROPOSED RESPONSE FROM CAMBRIDGESHIRE COUNTY COUNCIL

The numbered paragraphs below set out the proposed response to the consultation from Cambridgeshire County Council.

General overview

A.1 In general, Cambridgeshire County Council welcomes the development of the Great Ouse Catchment Flood Management Plan (CFMP) and the support it gives for the Council's objectives, particularly Strategic Objective 5: *Meeting Challenges of Climate Change and Enhancing the Natural Environment*.

A.2 The Council welcomes actions to protect and enhance biodiversity and the natural environment as well as those addressing climate change through adaptation measures. The Council further supports the aim of encouraging the use of Sustainable Urban Drainage Systems (SuDS) throughout the CFMP.

A.3 However, the Council has serious concerns over certain aspects of the CFMP, particularly regarding the assessment of future flood risk and the policy options chosen for particular policy units, and these are set out in more detail below.

Section 4 - Assessment of Future Flood Risk

Climate change

A.4 In Section 4.1.1 (p. 347) the CFMP refers to UK Climate Impacts Projections 2002 (UKCIP02). However, the Council recommends that the future climate impacts referred to in this section are reviewed with respect to the latest UK Climate Projections 09 (UKCP09) released in June 2009. Although it is acknowledged that the UKCIP02 projections are broadly equivalent to the central estimate (50%) values in UKCP09, it is considered that a study of this scope and importance should take account of the likely range of change impacts under UKCP09 (the 10th and 90th percentile) and adopt a precautionary approach to future climate risks.

A.5 The likely range of increased winter rainfall for the East of England region, as highlighted in UKCP09, (under a medium emissions scenario) is between 3 - 31% by 2050 and 4 - 44% by 2080. Although it is acknowledged that future climate projections are subject to a large degree of uncertainty - and it is accepted that this adds to the difficulty in accurately assessing the future impacts of the climate on flood risk – it is felt that the greater range of change highlighted in UKCP09 could mean that the actual impacts on peak river flows are greater than anticipated in this study.

Urban development

A.6 The housing totals given in Table 4.3 'Housing provisions in Cambridgeshire districts in the Great Ouse CFMP area' (p. 349) appear to be incorrect. The figures given for the districts, taken from the published East of England Plan (May 2008), are for a 20 year period and not for a 25 year period as shown in

the table. This means that the weighted annual housing growth figures in the final column underestimate the amount of development currently planned for the Cambridgeshire districts. Rolling these figures forward over the 100 year timescale of the CFMP will create a considerable discrepancy between the amount of development modelled in the CFMP and the amount currently planned for the County. This will have led to an underestimate of the risk affecting Cambridgeshire and could have generated inappropriate policy options.

A.7 It should be noted that in the recent review of the East of England Plan, looking at the period from 2011 to 2031, the Cambridgeshire authorities have put forward reduced rates of housing growth for the County which have been reflected in the published Draft East of England Plan (March 2010). However, even these figures are still higher than those shown in Table 4.3 and so the amount of development modelled for Cambridgeshire is likely to be a significant underestimate. It also needs to be noted that the Communities Secretary has recently announced that the Government intends to rapidly abolish Regional Strategies and return decision making powers on housing and planning to local councils (letter to Chief Planners, 27 May 2010).

A.8 In addition, the figures in the column showing the proportion of the Cambridgeshire districts within the area covered by the CFMP in Table 4.3 (p.349) do not match those in Table 3.9 (p. 160):

- In Table 3.9 it is stated that 96.9% of South Cambridgeshire District is within the Great Ouse catchment; in Table 4.3 it is stated that 66% of the District is within the catchment.
- In Table 3.9 it is stated that 66.5% of Fenland District is within the catchment; in Table 4.3 this figure is given as 95%.
- In Table 3.9 it is stated that 94.7% of Huntingdonshire District is within the catchment; in Table 4.3 this figure is 97%.

A.9 If the figures in Table 3.9 are correct, then this is likely to have led to an additional underestimate of development within the Great Ouse catchment, as a greater amount of development is planned for South Cambridgeshire than the other Cambridgeshire districts. This is also likely to have led to an incorrect amount of development being modelled for the different sub-area catchments and this may be reflected in the policy options chosen for the different policy units. South Cambridgeshire, for example, makes up a significant portion of the Eastern Rivers unit where a policy of reducing existing flood risk management actions is proposed.

A.10 It is therefore essential that the modelling work is re-run for those policy units covering Cambridgeshire if the CFMP is to be robust and withstand scrutiny.

Sensitivity testing

A.11 Regarding the Sensitivity testing outlined in Section 4.2.1 (p. 350) and Section 4.2.2 ‘Developing the Great Ouse Final Future Scenario’ (p. 356), the County Council acknowledges that the +20% allowance for increase in net sea level rise and peak river flows identified by the EA is consistent with the sensitivity ranges and recommended contingency allowances outlined by Defra in the

Flood and Coastal Defence Project Appraisal Guidance (FCDPAG) (2006) and those of Annex B of Planning Policy Statement 25. However the Council questions whether the +20% threshold is appropriate for the 'high' scenario.

A.12 Taking into account the uncertainty in future climate change - and the need to take a precautionary approach to flood risk management – the Council considers that the +20% threshold would be better represented as the 'medium' scenario, and that the 'high' scenario should model for a change in peak river flows of greater than +20%. It is therefore recommended that Section 4.5 'Comparison between Current and Future Flood Risk' (p.529) be re-examined in line with a 'high' scenario of greater than +20%.

A.13 Due to the 100-year time horizon for the modelling of flood risks, it would be useful for the study to highlight when the flood risk models will be reviewed in the future, in response to any changes in government legislation or further information about climate impacts.

A.14 The County Council agrees that flood risk from snow melt should decrease in the longer term as outlined in Section 4.3.1 (p. 358); however, it is important for the CFMP to recognise the likelihood of increasingly intense rainfall events due to future climate change. This should be taken account in the modelling and development of the Great Ouse CFMP.

Flood risks to people

A.15 The Council notes with concern that in Section 4.3.7 (p.381) the flood risk models highlight an anticipated 34,000 people in the Lower Bedford Ouse sub-catchment will be at risk from a 1 in 100 year flood event by 2110 (under the +20% scenario). It is noted that Cambridgeshire residents in St Neots, Little Paxton and St Ives will be among those affected by some of the largest increase in risk and this, in turn, would place additional pressure on Cambridgeshire County Council as a Category 1 responder to emergency events in the Communities Risk Register.

Other comments

A.16 Tables 4.30 ('Summary of future flood risks') and 4.31 ('Summary of current and future risk') for the Fens South Level 'rest of the sub-catchment' do not include any assessment of fluvial flood risk (p.524 and p.557), although tidal flood risk is included (10 people and £220,000 - £227,000 in economic damage).

A.17 Table 3.39 ('Summary of current flood risk') (p.343) does include some information regarding the current fluvial flood risk in the Fens South Level 'rest of sub-catchment'. This suggests that there is a relatively high level of risk, with 754 people at risk during a 1% annual probability event. However, no figures are given for economic damage from fluvial flooding.

A.18 Table 4.9 ('Number of people at risk in main areas from future flooding') suggests that this will increase and that 2,230 people will be at risk in the future from a 1% annual probability event in the Fens South Level 'rest of sub-catchment' (p.379). Table 4.12 ('Economic property damage to the main areas in the Great Ouse CFMP area for fluvial events in the future') suggests

that future economic damage in this part of the sub-catchment will be more than £6 million for a 1% annual probability flooding event (p.423).

A.19 It therefore seems that some information has been included in the background tables but not been transferred to the overall summary of risks. It is not clear from this whether fluvial flood risk in the rest of the sub-catchment has or has not been taken into account in the assessment for the Fens South Level. Overall, flood risk is considered to be 'medium' currently and to remain 'medium' in the future (p.557) – it is important to clarify whether these conclusions need to be reconsidered in light of the omissions highlighted above.

Section 6 – Policy Appraisal

Policy unit 1 (Bedford Ouse Rural), policy unit 18 (Eastern Rivers)

A.20 The County Council has serious concerns about the policy option chosen for policy units 1 and 18, which includes large parts of southern and western Cambridgeshire. Policy option 2 has been chosen which is to "reduce existing flood risk management actions (accepting that flood risk will increase over time)."

A.21 Questions over the assessment of the scale of future development in Cambridgeshire have been raised in paragraphs A.6 - A.10 above. It is essential that modelling for these areas is re-examined to determine whether this has affected the policy options chosen.

A.22 While it is accepted that the standard of flood risk protection must be proportionate to the risk involved, drawing such broad policy areas is likely to mask large variations of risk within the units. The justification for the policy choice states that: "Although the number of people affected is high in absolute terms, it is low when the size of the policy unit is taken into consideration". It further states that: "We do recognise there may be areas within this large policy unit where a reduction in FRM [flood risk management] activities is not viable".

A.23 These statements suggest that a more fine-grain approach to flood risk management is needed in these areas. This should either be through sub-dividing the policy units to highlight settlements or areas of higher quality farmland where a more precautionary approach is to be taken, or by stating more explicitly in the text where these areas are. While it is accepted that work remains to be done developing the actions arising from these policy choices, the danger is that such a broad approach will have damaging implications beyond the scope of the CFMP (for example, in bidding for funding).

A.24 It will also be critical that the solutions proposed (for example "using natural processes to alleviate flood risk, such as floodplain connectivity") are appropriately delivered in a timely fashion and that future areas for management (by the EA or others) are established in advance and management regimes are sustainable.

A.25 The assessment of damages for policy unit 18 (Eastern Rivers) states that selecting policy 2 will lead to an increase of £12.6 million in property damages (p. 667). However, the subsequent text suggests that this figure will be £13.93 million (£9.64 million increased residential damages and £4.29 million increased commercial damage) (p.668).

Policy unit 13 (St Neots and Little Paxton)

A.26 The Council supports the investigation into developing a Strategic Flood Storage Study to reduce and mitigate future flood risk to communities down stream and enhancing habitats linking the Great Ouse Wetland Vision.

Policy unit 14 (Huntingdon and Brampton)

A.27 The Council supports the need to ensure that any redevelopment of property in areas of flood risk incorporates resilience and adaptative measures so that the location, layout and design of development can help mitigate flood risk and increase resilience to climate change.

Policy unit 16 (Godmanchester)

A.28 The policy assessment for Godmanchester states that a future 1% annual probability flooding event would affect 452 properties (p. 659). However, this figure is less than the assessment of current risk (affecting 635 properties). Table 7.16 ('Action Plan for Policy Unit 16: Godmanchester') states that a total of 650 properties would be affected by a future 1% annual probability river flood (p.904). These discrepancies need to be corrected.

Policy unit 17 (Houghton, the Hemmingfords and St Ives)

A.29 It is noted that policy 4 has been selected as the preferred option for unit 17, because (as stated in PU17, Form 12.7), the policy *"gives a balance between cost and limiting the increase in risk to people, property and the economy in the future."*

A.30 Whilst the County Council accepts that the standard of flood protection must be proportional to the costs and the benefits gained, it is questioned why policy 5 has been rejected for Houghton, the Hemmingfords and St Ives when the level of flood risk in the location is anticipated to *increase* from low to medium (as identified in Section 4.5).

A.31 According to the summary of overall gains and losses for each policy (PU17, Form 12.7) policy 5 was dismissed for selection on the basis that *"the investment required to increase the standard of protection would not be proportional to the benefits*."

A.32 However, when reviewing the selection criteria, there appear to be discrepancies between the cost figures quoted in Form 12.6 and those quoted in the generic responses for policies 4 and 5:

- Generic Response: Policy 4 (maintain standard of protection of existing defences and implement strategic storage) states that: *"Total investment would therefore exceed £6.8m. We would also continue to invest in the*

region of £33,510 per annum on channel and asset maintenance activities." However, in Form 12.6, under the 'Economic Objectives' section, the annual expenditure is quoted as £50,265 and no total investment costs have been included.

- Generic Response: Policy 5 (maintain standard of protection of existing defences, implement strategic storage and increase capacity of culverts) states that: *"Total investment would therefore exceed £6.8m. We have estimate [sic] the cost of this to be approximately £164,000 for the local authority to mitigate the flood risks by improving culvert capacity. We would also continue to invest in the region of £33,510 per annum on channel and asset maintenance activities."* However, in Form 12.6, under the Economic Objectives section of Policy 5, the annual expenditure is quoted as £6.8 million.

A.33 There appears to have been an error in transposing annual maintenance costs and total investment costs into the assessment matrix, which has led to total investment costs being included for policy 5 but not for policy 4. This has resulted in the costs for policy 5 greatly exceeding policy 4 in the assessment, although previous tables suggest that the costs of these two policies are broadly similar. Given that policy 5 affords significant additional protection to people and properties in Houghton, the Hemmingfords and St Ives, the decision to chose policy 4 instead of policy 5 needs to be reassessed.

Policy unit 20 (Cambridge)

A.34 The selection of policy option 5 ("take further action to reduce flood risk") for Cambridge is supported, given the level of development planned for the City (as set out in CFMP, Appendix B, PU20, Form 12.5).

A.35 However, it is not clear from the plans accompanying the CFMP whether this policy unit includes the planned new town of Northstowe. It is recommended that, if this is not the case, then the boundary of the policy unit should be expanded to include the area of the new town. It is also recommended that Northstowe be included in the description of the policy unit given in the Appendix, PU20, Form 12.5.

A.36 The County Council supports actions to develop flood risk studies for Cambridge and along Vicars Brook for creating new flood defences and the investigation of using existing conservation sites for additional floodplain connectivity and storage. The County Council also supports the development of an Emergency Response Plan.

Policy unit 24 (The Fens)

A.37 The County Council supports the selection of policy option 4 ("take further action to sustain the current level of flood risk into the future") for The Fens. However, no separate assessment appears to have been undertaken for Ely in terms of current and future flood risk, although smaller settlements within this policy unit and elsewhere in the catchment have been assessed. It is not clear whether Ely has been considered in the 'rest of catchment' analysis in Table 4.31 'Summary of Current and Future Flood Risk' (p. 557). Given that new growth areas are planned for the north of Ely, it is essential that the

policy option for the City has been properly assessed against likely future risk and the CFMP needs to clarify how flood risk in Ely has been considered.

General Comments

Historic environment

A.38 The CFMP should contain three clear themes for the historic environment:

- resource assessment (evidence base);
- mitigation; and
- management.

It is considered that all three of these elements are lacking.

A.39 Reference should be made to the newly published Planning Policy Statement (PPS) 5: 'Planning and the Historic Environment' (where appropriate) plus the Government Vision on the Historic Environment for central guidance on the importance of these areas. It is considered that the CFMP does not meet the aspirations or objectives of the newly adopted PPS (see: http://www.communities.gov.uk/documents/planningandbuilding/pdf/1514132.pdf), or the Government's Statement on the Historic Environment for England (see: http://www.culture.gov.uk/reference_library/publications/6763.aspx) or their predecessors. It is recommended that the CFMP be reassessed in line with the information provided in these documents.

A.40 Regarding resource assessment, the CFMP uses the term 'Historic Environment Assessment' to describe designated features and in turn concentrates almost entirely on the designated environment (such as Scheduled Monuments, Parks and Gardens, Battlefields and Listed Buildings) while non-designated features are omitted. However, PPS 5, Policy HE9.6 states:

"There are many heritage assets with archaeological interest that are not currently designated as scheduled monuments, but which are demonstrably of equal significance…The absence of designation for such heritage assets does not indicate lower significance and they should be considered subject to the policies in HE9 to HE4 and HE10."

A.41 This is especially important in terms of archaeological assets, where PPS 5 specifically states that not everything important is scheduled, and that lack of scheduling does not necessarily equate to lack of importance. It is clear from the PPS that designated and non-designated sites should be considered in the CFMP.

A.42 Appendix C [to be supplied to the EA with this response] provides an evidence base of historic environment features in Cambridgeshire that was produced to support work on the Regional Spatial Strategy review. This gives an idea of the disparity between designated and non-designated sites when referring to the historic environment, and is a key point the CFMP should recognise. We recommend the CFMP be reassessed in line with this information.

A.43 Furthermore, historic environment features can also occur within as well as alongside waterways and water features. Subsequently, works to banks and beds may impact on historic environment features. These can include weirs, mill races, fords, bridge footings and the accumulated build up of material and objects lost in the waterways over the centuries, especially on the main Ouse Channel. Any works to improve water flow rates need to take this into consideration.

A.44 Specific mitigation actions where flood prevention works directly affect the historic environment are lacking. The CFMP does state that each project will have individually defined historic environment mitigation objectives, but it is considered essential to set out a 'standard' list of requirements and objectives within the CFMP to ensure consistency across the catchment. Again, the designs for mitigation need to take into account the wider evidence base for the area as outlined above and reiterate the importance of mitigation.

A.45 Wider management strategies (i.e. the treatment of sites to be affected by flooding) are also lacking and need to be addressed. This can be by identifying areas deliberately set aside for holding flood water that may affect historic environment assets. There should be both a recognition of this and an assessment of impacts.

A.46 The policy units affecting Cambridgeshire are lacking in historic environment input. Again, whilst it can be accepted that responses within these areas could draw upon local historic environment appraisals, without firm steer on the information sources available or options to be considered, these will be too weak to afford appropriate levels of protection.

A.47 The CFMP is trying to deal with a huge impact on a wide area; the plan can objectively predict the spread of flooding across the catchment area, but not the impact on the historic environment. Any impact assessment needs to recognise the scale and variety of the historic environment including designated and non-designated sites and the wider range of issues for mitigation and management. The CFMP should present guidance and parameters for future works. Without this, it is considered that the CFMP is inadequate for managing the impact on the historic environment and thus contrary to policy guidance.

Biodiversity

A.48 It is noted that the actions plans for the policy units affecting Cambridgeshire will support and help deliver the 50 Year Wildlife Vision for Cambridgeshire and Peterborough (Cambridgeshire and Peterborough Biodiversity Partnership). Subject to the comments on the individual policy units given above, we support the policy approach for Cambridgeshire, providing the policies adopted do not adversely impact on the county's biodiversity, including Species or Habitats of Principal Importance for conserving biodiversity and designated sites of nature conservation including non-statutory designated sites, such as County Wildlife Sites.

Green infrastructure

A.49 The County Council supports the action plans for the Cambridgeshire Policy Units in helping deliver Green Infrastructure in the area and the vision and objectives of the Green Infrastructure Strategy for the Cambridge Sub-Region.

A.50 However, it is disappointing that Green Infrastructure is not referenced within the main body of the CFMP and it is considered that these linkages should be expanded upon. There are numerous areas where the CFMP can contribute to Green Infrastructure provision across the Great Ouse catchment and specifically within Policy Units. The EA is closely involved in the development and delivery of Green Infrastructure Strategies and projects across the catchment area including within Cambridgeshire.

A.51 The importance of Green Infrastructure is recognised in Planning Policy Statement (PPS) 12 and defined as: “a network of multi-functional green space, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities.” As such Green Infrastructure Strategies and projects deal with many of the opportunities identified in the CFMP, including habitat creation and protection, restoration of natural river processes, re-connecting to the floodplain, flood storage, promotion of agri-environmental schemes, restoring the natural appearance and process of rivers, recreation uses, SuDS, etc. Furthermore, many of the sites and projects mentioned within the Cambridgeshire Policy Units are included in the Green Infrastructure Strategy for the Cambridge Sub-Region and the draft review and second edition of the Strategy, which is due for completion at the end of 2010 (including Paxton Pits, the Great Fen and Wicken Fen).

A.52 The importance of Green Infrastructure is further recognised at a national level in the draft Planning Policy Statements ‘Planning for a Natural and Healthy Environment’ and ‘Planning for a Low Carbon Future in a Changing Climate’, both of which contain policies that reference, or relate directly to, Green Infrastructure.

A.53 The County Council particularly welcomes opportunities relating to Bin Brook (policy unit 20) and Alconbury Brook (policy unit 15). We recommend the Bin Brook scheme makes reference to Coton Countryside Reserve, as any works along the Brook will enhance and support this important Green Infrastructure site to the west of Cambridge. The EA is no doubt aware that Cambridge Past, Present and Future - the organisation developing the Reserve - has previously explored habitat creation and flood storage along the Brook in 2004-6.

A.54 The River Cam Restoration Project undertaken in 2008-10 by South Cambridgeshire District Council (possibly referred to in the CFMP as “a Section 106 agreement to improve the riparian corridor for conservation, fisheries and recreation from Hauxton to Byron’s Pool”, p. 675) is a good case study for applying to Alconbury, Bin and Bourn Brooks and could be referenced in relation to these opportunities.

Suggested amendments to text and layout

A.55 It is suggested that page numbers be added to the appendices for ease of reference. It would also be beneficial if sections related to each other are indicated in a clearer manner.

A.56 It would be helpful if all documents which play a role in helping to deliver actions in the CFMP are listed (including relevant Planning Policy Statements, Green Infrastructure Strategy for Cambridge Sub-Region and draft second edition, and Cambridgeshire and Peterborough Biodiversity Action Plan). Any legislation relevant to the CFMP could also be listed, for example, the Natural Environment and Rural Communities Act 2006. The inclusion of these documents would further strengthen the ability of the CFMP to protect and enhance the natural environment and support the delivery of these strategies.

A.57 It would be beneficial if the finalised document refer to the most up-to-date legislation; for example, the 1994 Habitats Regulations quoted in the CFMP have recently been consolidated and amended to become the Conservation of Habitats and Species Regulations 2010.

A.58 The source publication of regional net sea level rise allowances in Chapter 4 ‘Future Flood Risk’ Table 4.1 should be referenced – it is assumed that this is Defra’s ‘Flood and Coastal Defence Appraisal Guide’ (FCDPAG) (2006).

A.59 References to “Granchester” (p.673, Appendix B, policy unit 20, form 12.5, and form 12.8) should be corrected to Grantchester.

Appendix B: Great Ouse Catchment Flood Management Plan – Policy Units and Proposed Policy Options