

**Statement of Common Ground between
Ipswich Borough Council as Local Planning Authority
and
The Environment Agency
Iteration 2, 8th October 2020**

Scope

1. This Statement of Common Ground identifies areas of agreement between the Environment Agency ('EA') and Ipswich Borough Council ('the Council') in relation to the Environment Agency's representations to the Final Draft Ipswich Local Plan and the supporting evidence set out in the draft updated Ipswich Strategic Flood Risk Assessment (SFRA).

Objective

2. The objective of this second iteration of the Statement of Common Ground is to secure agreement between the parties to ensure a satisfactory evidence base for flood risk in relation to the Final Draft Ipswich Local Plan, to enable the Plan to be found sound.

Background to Ipswich Flood Risk

3. Ipswich is located where the fluvial River Gipping becomes the tidal River Orwell. The town has historically been at risk of tidal flooding during tidal surge conditions and this risk has been increasing with rising sea levels attributed to a changing climate. The town was subject to flooding in 1953 when large parts of the east coast of England were inundated during a tidal surge. More recently, high tide conditions threatened the town in 2007 and 2013, both of which were close to spilling over the existing defences.
4. In response to the risk of tidal flooding affecting Ipswich, a new tidal flood defence barrier was officially opened in February 2019. The barrier, in combination with 1,100 metres of new and refurbished flood walls and a series of flood gates on the banks of the River Orwell, are designed to reduce the risk of tidal flooding to homes, businesses and key infrastructure.
5. The River Gipping and its tributaries pose a fluvial flood risk to the Borough with historical fluvial events recorded in 1939 and 1947. Fluvial flood risk is currently well managed. Fluvial flood modelling outputs currently available to the Council for the purpose of informing its SFRA date from 2020 (River Gipping) and 2015 (Belstead Brook). The modelling of the Belstead Brook undertaken in 2015 included an allowance for climate change for the 1% AEP, 0.5% AEP and 0.1% AEP events plus a 20% increase in flow, in accordance with the guidance available at the time of modelling. Since then, the Environment Agency has issued revised guidance and advised that a range of allowances be considered, based on River Basin District. For the Anglian River Basin District, allowances of 25%, 35% and 65% should be considered. Therefore, the SFRA update has included for Belstead Brook re-running the 1% AEP model scenario including 25%, 35% and 65% increases in peak flow. This is shown in figures 9A, 9B and 9C of the SFRA update.

6. The Environment Agency engaged Mott McDonald to develop a new fluvial flood model for the River Gipping with updated hydrology and inclusion of up to date climate change guidance. This is still going through final completion and sign off by the Environment Agency. However, outputs have been technically verified by the EA and have been made available for inclusion within the SFRA published in October 2020. It should be noted that the EA, whilst satisfied that the outputs are now showing accurately in the new Gipping model, hence the approval to share with the Council in advance of official sign off, reserves the right to make amendments to the model data until such time that the model is formally signed off.
7. The town is also at risk of flooding from surface water runoff and exceedance of the local drainage network. In some localised areas (along spring lines and in some tributary valleys) this is exacerbated by the underlying ground conditions which are susceptible to groundwater emergence. In locations close to the tidal estuary, surface water may not be able to drain away during high tide conditions.

Evidence Base

8. The evidence base for flood risk consists of:
 - a. a 2011 Level 2 Ipswich SFRA,
 - b. a draft updated Ipswich SFRA October 2020,
 - c. an updated sequential and exception test statement October 2020, and
 - d. the Ipswich Borough Council Development and Flood Risk Supplementary Planning Document, 2013, updated 2016.
9. The Council has a Development and Flood Risk Supplementary Planning Document (SPD) adopted in September 2013 and last updated in 2016. The document is due to be reviewed following the update of the SFRA to reflect the 2020 Gipping Model outputs. Officers are working to prepare a draft amended SPD to go to the Executive on 9 March 2021. The adopted Development and Flood Risk SPD sets out the safety framework, but primarily for the residual risks of tidal flooding. This will need to be extended to address the actual risk of fluvial flooding over a development's lifetime, which includes the risk of fluvial flooding from future extreme events.
10. The updated documents have been prepared by Aecom Infrastructure and Environment UK Ltd on behalf of Ipswich Borough Council in consultation with Suffolk County Council, Suffolk Joint Emergency Planning Unit and the Environment Agency.
11. The updated Ipswich SFRA incorporates a level 1 and level 2 SFRA. The level 1 SFRA describes all sources of flood risk in the Local Plan area, including the impact of climate change in the future, and informs the sequential test. The level 2 SFRA provides evidence in relation to the scope of possible measures to reduce flood risk to acceptable levels.

Environment Agency Objections to the Final Draft Ipswich Local Plan

12. The Environment Agency has submitted the following objections to the Final Draft Ipswich Local Plan. Supporting representation are not included in this Statement of Common Ground.

Table 1 Environment Agency Objections, Regulation 19

Representation ID	Policy/Chapter	Representation	Change required
26274	Chapter 6 Vision and Objectives	Paragraph 6.16 states that the Strategic Flood Risk Assessment (SFRA) has been revised. However, this is currently being updated so this section should be amended. The Local Plan should also refer to the SFRA as being a living document.	Changes to plan: Paragraph 6.16 states that the Strategic Flood Risk Assessment (SFRA) has been revised. However, this is currently being updated so this section should be amended. The Local Plan should also refer to the SFRA as being a living document. Our full comments in relation to this can be found within our response to policy DM4 - Flood Risk. This is the main reason for our objection comment.
26275	CS1 Sustainable Development	We are pleased that paragraph 8.41 refers to UKCP18. Paragraph 8.44 refers to buildings at risk of flooding through tidal surges and heavy rain. However, this paragraph does not specifically refer to fluvial flood risk. We therefore would require this to be updated accordingly. Paragraph 8.45 refers to the SFRA. The SFRA is a living document and should be updated when new modelling becomes available.	Changes to plan: We are pleased that paragraph 8.41 refers to UKCP18. Paragraph 8.44 refers to buildings at risk of flooding through tidal surges and heavy rain. However, this paragraph does not specifically refer to fluvial flood risk. We therefore would require this to be updated accordingly. Paragraph 8.45 refers to the SFRA. The SFRA is a living document and should be updated when new modelling becomes available. Our main comments that need to be actioned relating to the SFRA can be found within our response to policy DM4 - Flood Risk.
26278	Plan 2 Flood Risk	This plan includes a statement which says "This plan of nationally designated flood zones relates to fluvial flooding. Further information on pluvial (surface water) flooding can be found in the Strategic Flood Risk Assessment (SFRA)." This statement is incorrect as the plan shows both fluvial and tidal flooding. This will also need to be updated when the new modelling which will be within the living SFRA when completed.	Changes to plan: This plan includes a statement which says "This plan of nationally designated flood zones relates to fluvial flooding. Further information on pluvial (surface water) flooding can be found in the Strategic Flood Risk Assessment (SFRA)." This statement is incorrect as the plan shows both fluvial and tidal flooding. This will also need to be updated when the new modelling which will be within the living SFRA when completed. Our full comments on the SFRA can be found in our response to policy DM4 - Development and Flood Risk.

26279	DM4 Development and Flood Risk	At present, we are raising an unsound representation on Flood Risk grounds. This is because the evidence base that informs the Local Plan is not yet finalised. Further information can be found below [see right].	Changes to plan: At present, we are raising an unsound representation on Flood Risk grounds. This is because the evidence base that informs the Local Plan is not yet finalised. The Strategic Flood Risk Assessment (SFRA) has not yet been agreed as the River Gipping fluvial model is not yet verified and ready for use. This is because we are still awaiting the final outputs and deliverables for this model. Therefore, there is not currently a reliable evidence base to derive the SFRA and inform the Local Plan. We have and will continue to work in partnership with Ipswich Borough Council on the SFRA. As soon the modelling is completed we will be able to engage further to ensure that the SFRA is finalised and the Local Plan appropriately reflects its findings. A statement of common ground will be prepared if required. In addition to the above, we have included our comments below on the rest of the Local Plan document. These have been provided in the same format as the Local Plan itself. In terms of the rest of the policy itself: Paragraph 9.4.10 needs to make reference to the fact that the SFRA is a living document and is awaiting modelling information to update it. We fully agree with paragraph 9.4.12 which states that more and less vulnerable development in Flood Zones 2 and 3a may be acceptable but will require Flood Risk Assessments (FRAs) to demonstrate that such developments will be safe.
26284	Chapter 1	Comments above are mainly pulled from our response to policy DM4 of the local plan. These have been reiterated here in the introduction section to the site allocation document because our comments cannot be site specific until the SFRA and Gipping model are complete.	Changes to plan: Our full comments and what needs to be changed can be found above.

Areas of Agreement

13. The parties to this Statement of Common Ground agree that:

- 13.1 The updated Ipswich SFRA has been produced as a living document, which is in line with the latest guidance on gov.uk for “How to prepare a Strategic Flood Risk Assessment”¹. Therefore, it will need to be subject to periodic review.

- 13.2 The updated Ipswich SFRA October 2020 now reflects the outputs of the new River Gipping Model. The River Gipping modelling confirms that during the present day conditions, the study area is not at risk of flooding from the River Gipping for the design event (1% AEP). However, based on current predictions of climate change and the assumption that no upgrades to the defences will be made, there is potential for areas of Ipswich to be at actual risk of fluvial flooding from the River Gipping during the design event in the future as well as being at risk from extreme events in the future. The SFRA Executive Summary wording as revised is duplicated below (see paragraph 4) to help provide clarity to the definitions of actual and residual flood risk. (Section 7.2.1 of the revised SFRA also provides additional explanation.)

¹ <https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment>

1. Executive Summary

Ipswich is located where the fluvial River Gipping becomes the tidal River Orwell. The town has historically been at risk of tidal flooding during tidal surge conditions and this risk has been increasing with rising sea levels attributed to a changing climate. The town was subject to flooding in 1953 when large parts of the east coast of England were inundated during a tidal surge. More recently, high tide conditions threatened the town in 2007 and 2013, both of which were close to spilling over the existing defences.

In response to the risk of tidal flooding affecting Ipswich, a new tidal flood defence barrier was officially opened in February 2019. The barrier, in combination with 1,100 metres of new and refurbished flood walls and a series of flood gates on the banks of the River Orwell, are designed to reduce the risk of flooding to 1,608 homes and 422 businesses as well as key infrastructure. The barrier provides protection to the town for the 1 in 300 year annual probability tidal flood event accounting for climate change uplift to tidal levels to the year 2118. The risk of tidal flooding to Ipswich is therefore a 'residual risk' i.e. it is only at risk of tidal flooding in the event of a breach in the flood defences or a failure of the operation of the barrier.

The River Gipping and its tributaries have posed a fluvial flood risk to the Borough in the past, with historical fluvial events recorded in 1939 and 1947. According to results of the recently completed hydraulic modelling of the River Gipping¹, the town is protected from flooding by flood defences for the *design flood* event (1% annual exceedance probability (AEP) event) during the present day scenario. However, in the future, as a result of the impacts of climate change, the risk of flooding from the River Gipping during the design event could increase on the northern side of the watercourse, throughout Ipswich village, assuming no alterations are made to the flood defence levels in this area. Based on this information, there is therefore an 'actual' risk of fluvial flooding from the River Gipping during the design event in the future.

The hydraulic modelling of the River Gipping shows that a small area on the west bank of the River Gipping on the edge of Sainsbury's off Hadleigh Road is at risk of flooding during the *extreme flood* event (0.1% AEP) during the present day. When considering the impacts of climate change, the risk of flooding extends throughout Ipswich town. This risk of flooding from a severe flood event such as this which exceeds a flood management design standard is defined in paragraph 041 of the Planning Practice Guidance as a 'residual risk'. However, in this case, the outputs from the hydraulic modelling demonstrates that during the extreme event (0.1% AEP) the risk of overtopping of the defences is also an 'actual risk'.

The town is at risk of flooding from surface water runoff and exceedance of the local drainage network. In some localised areas (along spring lines and in some tributary valleys) this is exacerbated by the underlying ground conditions which are susceptible to groundwater emergence. In locations close to the tidal estuary, surface water may not be able to drain away during high tide conditions. Currently areas considered to be at greatest risk include Swinburne Rd, Norwich Rd, Monton Rise, Bridgewater Rd, Ellenbrook Rd, Bixley Rd, Holywells Rd, Duke Street and Maidenhall.

Ipswich Borough Council, in their role as Local Planning Authority, has the responsibility to ensure that the risk of flooding is understood and managed effectively through all stages of the planning process, in accordance with the Government's approach for 'meeting the challenge of climate change, flooding and coastal change' set out in Section 14 of the National Planning Policy Framework.

Ipswich Borough Council (IBC) is required to undertake a Strategic Flood Risk Assessment (SFRA) to form part of the evidence base for the Local Plan. This SFRA supersedes the former SFRA which was published in May 2011.

- 13.3 The results of the new Gipping Model (2020) show that a number of site allocations in the Local Plan are affected by fluvial flood risk during their lifetime as a result of anticipated increases in the magnitude of flood flows as a consequence of climate change. Therefore, the site assessments set out in Appendix F of the SFRA October 2020 for sites IP003, IP004, IP051, IP119, IP120b, IP279b(2), IP354 and IP355 have been amended to reflect the Gipping Model design flood (the 1% AEP event including 65% climate change uplift) data. A new site sheet has been provided for site IP105. Further SFRA site sheets have been updated to reflect the impacts of a flood event occurring in the future that is more severe than a design flood (i.e. the 0.1% AEP event including 25% climate change uplift) for sites: IP011b, IP015, IP028b, IP043, IP045, IP047, IP054, IP064, IP133, IP136 and IP226. A summary of the changes made to the SFRA October 2020 is provided at Appendix 1. A schedule of the EA's comments on the updated draft SFRA of 28th September 2020 and how they have been

addressed through the final SFRA of 8th October 2020 is also included at Appendix 3. The understanding of flood risks is periodically reviewed by the Environment Agency, with reviews of flood modelling taking place approximately once every ten years, including reviews of catchment hydrology, updated flood frequency analysis that incorporates river flow and tide level data measured over this period, and any revisions to UK climate change projections arising over this period. Further reviews of local flood risk will, therefore, fall within the Local Plan period, but these should be accommodated through updates to the SFRA which is intended to be a “Living Document”.

13.4 The October 2020 update to the Ipswich SFRA also makes recommendations for changes to the safety framework which will be addressed through a review of the Ipswich Development and Flood Risk SPD with a draft to be prepared by March 2021.

13.5 To facilitate the submission version of the SFRA and allow the Local Plan process to proceed without delay, it was agreed with the Environment Agency on 10th June 2020 that the Council would ask the Planning Inspector to consider changes being incorporated into the Local Plan as follows and set out in detail in Appendix 2:

- (i) to amend references within the Core Strategy and Policies Development Plan Document (DPD) to the SFRA to clarify that it is a living document;
- (ii) to include a commitment within the Core Strategy and Policies DPD to updating the Development and Flood Risk SPD after the Gipping Model is published; and
- (iii) to add wording to the reasoned justification of the Core Strategy and Policies DPD, Policy DM4 and Site Allocations and Policies DPD Policy SP2 as follows:

‘Should proposed development allocations come forward before the updated Gipping Model results are available, site specific FRAs for developments will need to use the current Flood Risk Assessments: Climate Change Allowances as published on the gov.uk website in order to identify, and mitigate, any fluvial flood risks over the lifetime of the development and to determine measures to ensure that the development will be safe.’

13.6 Further to the update to the SFRA published in October 2020 to reflect the new Gipping Model data, items 13.5 (i) and (ii) above remain relevant and are retained as requested modifications through appendix 2 to this statement of common ground. Item 13.5 (iii) above is no longer relevant, as the SFRA now incorporates the new Gipping Model data, and consequently Appendix 2 has been amended to bring the requested modifications up to date.

13.7 Through the statement of common ground dated 10th June 2020, the Council undertook to pause the review of the Development and Flood Risk SPD until the new Gipping Model had been released so that the review could take account of the new information. With the Gipping Model data now reflected through the SFRA October 2020, the Council considers that the review of the Development and Flood Risk SPD should commence immediately and a draft will be prepared for consideration by the Council’s Executive on March 9 2021.

- 13.8 The Council and Environment Agency agree to continue working together throughout the examination of the Final Draft Local Plan to address issues relating to an improved understanding of fluvial flood risks and how these may need to be considered in the context of proposed Local Plan allocations, the SFRA and the Development and Flood Risk SPD (including the Safety Framework) and will update the Statement of Common Ground as necessary throughout that process. This document is the second iteration of the statement of common ground.
- 13.9 The location of Ipswich on the River Gipping and Orwell Estuary means that areas of central Ipswich containing existing homes, businesses and other uses lie within Flood Zone 3. Management of the tidal flood risk to these is being addressed through the strategic Ipswich Flood Defence Management Strategy (IFDMS). The fluvial flood risk management is not considered within the IFDMS based on the understanding of fluvial flood risk at this point in time, however the strategy will need to adapt to this source of risk as it becomes more of a priority due to the forecast impacts of climate change over the next century.
- 13.10 The Council has an established approach, through the Development and Flood Risk SPD Safety Framework, to ensure that new development will be safe for residents. The safety framework links back to the up to date hazard mapping for tidal defence breaching. The safety framework now needs to be updated to address actual fluvial flood risk over development lifetimes in addition to residual tidal flood risk. This will be subject to periodic update through the 'living document' SFRA.
- 13.11 As a result of the update to the SFRA to include data from the New Gipping Model, and subsequent amendments arising, as reflected through iteration 2 of this statement of common ground, the Environment Agency is now satisfied with the evidence base available to inform the Local Plan and is now in a position to withdraw its unsound representation to the Final Draft Local Plan.

Signatures

Signed



Name

Martyn Fulcher

Position

Head of Development

Date

8 October 2020

Ipswich Borough Council



Signed

Name Ali Taylor

Position Environment, Planning & Engagement Manager

Date 8 October 2020

Environment Agency

Appendix 1 Key Changes Made to the SFRA October 2020 as a result of the new Gipping Model

Main Report

- References to the Gipping model have been updated throughout (e.g. Sections 1,2.4,5.2,8.1).
- The text has been updated throughout where it refers to new climate change guidance or the EA National FCERM Strategy.
- Executive summary – slight modification of two paragraphs. The first relates to the standard of protection afforded by the Ipswich barrier. The second refers to new Gipping model and current day levels of protection from fluvial flooding recognising the risk from the 1000yr current day event to a small area northwest of Handford Road near Sainsburys and acknowledging that there is a possibility that fluvial flood risk to an area to the north of the Gipping in Ipswich village could increase as a result of climate change if no alterations made to flood defence levels in that area and acknowledging an “actual” risk of fluvial flooding from the Gipping in future.
- Chapter 2 Introduction - Only changed to update references to the Gipping Model.

Chapter 3 Sources of Flooding – Unchanged

- Chapter 4 Policy and Local Context – updated to remove reference to ‘Adapting to Climate Change Advice for Flood and Coastal Erosion Risk Management Authorities’ which has now been transferred into the Climate Change for FRAs Guidance on the gov.uk website.
- Chapter 5 Assessment of Flood Risk – Gipping modelling section has been changed to reflect the availability of the 2020 Gipping modelling. It identifies that there is a current day 1000 yr risk of fluvial flooding to an area close to the Sainsburys supermarket site – “The modelling shows that during the present day defended scenarios, floodwater remains in bank within the Ipswich study area during the 5% AEP event and 1% AEP event. During the 0.1% AEP (1 in 1000 year) event, there is some flooding on the west bank of the River Gipping on the edge of Sainsbury’s off Hadleigh Road”. Peak River Flow Climate Change Allowances section now refers to new event AEPs and allowance bands from the 2020 Gipping Model.
- Chapter 6 – Assessment of Residual Tidal Flood Risk – Unchanged.
- Chapter 7 Safety of Development - Added references to the Planning Practice Guidance, and definitions of ‘design flood’ and ‘extreme flood’. The Safety Framework in Chapter 7 now specifically refers to the two different risks from the Gipping (actual fluvial risk in the future) and Orwell (residual tidal risk only), and how, due to the nature of the two types of risks, the response needed in terms of both building design and emergency response is different. For actual fluvial risk, it states that mitigation for the Design flood requires finished floor levels to be above design flood levels (including climate change) and that safe access should be available in relation to the design flood including allowances for climate change. It identifies the likelihood of advanced warning for fluvial flooding because Ipswich is at bottom end of the Gipping catchment. The SFRA advocates evacuation in advance of an extreme flood, moving valuables to higher level within building and states that safe refuge should be provided above the extreme flood level (including climate change allowance) – relevant finished floor levels are provided. It advocates a re-think of Ipswich Emergency Plan with regard to targeted evacuation or strategies for refuge. For residual tidal risk, it explains that the standard of protection

afforded by the barrier and new defences well exceeds the tidal Design Flood water level (including uplift for climate change). It recommends the Council to formalise the strategy for managing residual tidal risk and to engage with residents to ensure that they are aware of what to do in the unlikely circumstances of tidal breach rapid inundation. It recommends a change in approach in areas at residual risk of tidal flooding, to require that sleeping accommodation needs to be above the maximum flood level. Previously the advice was for all habitable accommodation to be above the maximum flood level, but this is not necessarily essential given the nature of the risk as a residual risk of flooding. (Note: any changes to the safety framework will be formalised through the review of the Development and Flood Risk SPD.) Information on the structural safety of buildings, measures to assist emergency services, emergency flood warning plans and water compatible development has not changed.

- Chapter 8 Applying the Sequential test – bullet added for fluvial flood risk; Table 8-1 Exception Test – columns added to show Gipping flood levels and hazard rating, and text in last column updated.
- Chapter 9 Flood Risk Management – reference added to basements not being permitted where the floor level is less than the 0.1% AEP fluvial flood level in 100 years' time (in addition to the text that refers to the tidal level). Reference to 9m distance for riverside development amended to reflect current flood risk permitting advice, i.e. 8m from a main river fluvial watercourse and 16m from any tidal main river or flood defence structure (whether structure is tidal or fluvial). Reference added to EA proposal to add a new flood warning area for the contingency of barrier failure". It is likely that the existing tidal flood warning areas will be reviewed soon as they reflect the former risk threshold levels of the old tidal defences pre-barrier commissioning.
- Chapter 10 Guidance for FRAs – last line of table amended regarding safe refuge to address sites only at risk of fluvial flooding.
- Chapter 11 Flood Risk Policy and Development Management Approach – references added to new permitted development rights linked to changes of use and the need to undertake a Flood Risk Assessment in certain circumstances, and to when basement dwellings would not be permitted. Table 11-1 amended to include finished floor levels and safe access/egress for fluvial flooding requirements.

Appendix A Figures

- Updated Figure 6 Flood Map for Planning.
- Updated Figure 8 (now 8A) River Gipping Flood Extents.
- There are new figures 8B, 8C, 8D, 8E, 8F and 8G showing the maximum flood depths and hazard ratings for the following events: 1% AEP plus 65% cc, 0.1% AEP plus 25% cc and 0.1% AEP present day.

Appendix F Proformas

- The following proformas have been revised with the Gipping data: IP003; IP004; IP051; IP119; IP120b; IP279b(2); IP354; IP355.
- There is a new proforma for Site 105 Depot Beaconsfield Road which has not previously been included as a site with flood risk.

- The following proformas have additional text regarding the risk from the Gipping during an extreme flood in the future (i.e. the 1 in 1000 year event including climate change): IP011b; IP015; IP028b; IP043; IP045; IP047; IP054; IP064; IP133; IP136; IP226.
- Remaining proformas have been updated to ensure consistent reference to fluvial and tidal flood risks (IP011c; IP031; IP031b; IP035; IP037; IP039a; IP052; IP098; IP132; IP150d & e; IP184a & b & c; IP188).

Appendix 2 Detailed wording changes suggested for the Final Draft Local Plan

Table 2 Detailed Proposed changes

Change ref	Chapter/ policy / paragraph of Local Plan	Suggested wording amendment – additions underlined and deletions struck through
1	Core Strategy and Policies DPD, Chapter 6. Vision and Objectives Paragraph 6.16	<p>An update of the The Council's Level 2 Strategic Flood Risk Assessment (SFRA) was revised <u>commenced</u> in 2019. <u>The SFRA is a living document which will be subject to periodic review and update to reflect new modelling data.</u> <u>An updated SFRA was published in October 2020 to reflect new River Gipping Model data.</u> The SFRA it provides guidance on residual tidal flood risk <u>and actual fluvial flood risk in Ipswich both for the situation before and after completion of the flood barrier.</u> The SFRA also suggests a <u>makes recommendations for the framework for safe development.</u> The safety framework is detailed in the Council's Development and Flood Risk SPD (September 2013, <u>updated 2016</u>) which is in the process of being to <u>be updated again in response to the changes in flood risk information resulting from the Environment Agency's Gipping Model</u> and includes requirements for:</p>
2	Core Strategy and Policies DPD Policy CS1, Paragraph 8.44	<p>8.44 Many buildings in Ipswich are at risk of flooding, some from tidal surges, <u>some from fluvial flooding and some</u> and many from heavy rain. This risk will continue to grow as a result of rising sea levels and increasingly heavy rainstorms that can overwhelm drainage systems and cause localised flooding unless mitigation measures are implemented. At the strategic scale, tidal flood risk has been addressed through the effective completion of the Ipswich Flood Defence scheme. However, developments located within the flood plain will still need to address residual risk in accordance with the National Planning Policy Framework (e.g. the risk of defences failing) <u>and will also need to address fluvial risk which may increase over a development's lifetime.</u> Managing surface water run-off is also important. SuDS, rainwater harvesting, storage and where appropriate the use of green roofs or water from local land drainage will be required wherever practical. Such approaches shall be particularly mindful of relevant ecological networks. New buildings need to be more adaptable and resilient to climate change effects in future. This is taken forward through policy DM4.</p>
3	Core Strategy and Policies DPD Policy CS1, Paragraph 8.45	<p>The Council's Strategic Flood Risk Assessment 2011 has been <u>substantially updated.</u> <u>It is a living document and will be subject to periodic review and update to reflect new modelling data as this becomes available.</u> The approach to flood risk and water infrastructure is addressed through policies CS17 and CS18, and DM4. Further guidance is contained in the Development and Flood Risk Supplementary Planning Document 2016, <u>which is also subject to review.</u></p>

4	Core Strategy and Policies DPD, Policy DM4, Paragraph 9.4.10	The Council's Level 2 SFRA <u>October 2020</u> provides information relevant to both the existing tidal <u>and fluvial defences at 20192011</u> and also to the <u>completed defences, with the proposed new Ipswich tidal flood barrier and defence improvements</u> in place. In each case the SFRA provides data on residual <u>tidal flood risks and actual fluvial flood risks</u> taking account of flood depth, <u>velocity</u> and the <u>velocity hazard rating</u> of floodwater. The preparation of many site-specific FRAs can make use of mapped risks from the new SFRA. <u>The SFRA is a living document subject to periodic update.</u> However, in some instances, site-specific FRAs will still need to include detailed flood modelling to ascertain the flood risk. <u>In the interim, until the new Development and Flood Risk SPD is adopted, applicants are referred to the new evidence, which is available through the refresh of the SFRA, when assessing flood risk over their development's lifetime and designing any flood risk mitigation required to ensure that their development will be safe.</u>
5	Core Strategy and Policies DPD Plan 2	This plan of nationally designated flood zones relates to fluvial <u>and tidal flooding</u> . Further information on pluvial (surface water) flooding can be found in the Strategic Flood Risk Assessment (SFRA).
6	Site Allocations (Incorporating IP-One Area Action Plan) DPD, Policy SP2, Paragraph 4.12	4.12 In allocating sites for development the Council has followed the sequential approach, to ensure that sites are not allocated in areas with a greater probability of flooding if sites in lower risk areas are available. It has also applied the exception test to ensure that the benefits to the community of development outweigh flood risk, and ensure that development will be safe. Planning applications for sites which lie within Flood Zones 2 and 3 will need to be supported by a site specific Flood Risk Assessment. <u>In the interim, until the new Development and Flood Risk SPD is adopted, applicants are referred to the new evidence, which is available through the refresh of the SFRA, when assessing flood risk and designing any flood risk mitigation required to ensure that their development will be safe.</u> The Council's supplementary planning document on Development and Flood Risk provides more guidance <u>and will be updated to reflect the SFRA published in October 2020.</u>

Appendix 3 Schedule of EA Comments on the updated SFRA 28th September 2020 and changes made to the final version SFRA of 8th October 2020 in response

Comment	Response	Action	Completed
Executive Summary: The paragraph on the Ipswich Barrier could state that the level of protection afforded by the barrier is 1 in 300 accounting for climate change uplift to tidal levels to the year 2118.	Update text	AECOM	Yes
SFRA User Guide: The submitted Sequential Test and Exception Test document should be updated to include the new fluvial flood risk information from the 2020 Gipping model.	Update text	AECOM	Yes
River Gipping: In the Section headed “Modelling” – we note that no maps/figures have been included in Appendix A for the Max Depth and Hazard relating to the 0.1% AEP (1 in 1000) current day event. We appreciate that this only affects a small area of land north of Handford Road/Hadleigh Road and there are no Local Plan development allocations on the land affected. We note that the flood extent for the 0.1% AEP current day event is shown in Figure 8A.	Include maps	AECOM	Yes
<p>Assessment of Residual Tidal Flood Risk</p> <p>In the section headed “Modelling” there is a reference of a 2015 baseline used in table 6-1 – we consider that this should be amended to ‘2018’ which is when the coastal/tidal modelling by JBA was last carried out. We consider that the Hazard maps in Section 6.2.5 are too small to allow for site level comparisons with the hazard rating table at the top of the section. It would be helpful if these maps could be made available with zoom capability, perhaps as high resolution PDFs. There is further use of 2015 in reference to a baseline within tables and main text body in section 6.2.5. This should be amended to ‘2018’, as mentioned above, for consistency throughout the report.</p>	<p>Text updated. Maps had previously been prepared for the SFRA but decided only to include the composite maps. The individual breach hazard maps have been included in a new stand alone appendix - Appendix G (32 maps). These need to be numbered and the present day maps need to be labelled as 2018 (rather than 2015) in line with other comments from the EA. Completed. Text updated.</p>	AECOM	Yes

<p>Safety of development in Flood Zones 2 and 3 to inform the Exception Test</p> <p>We note that a reference to the EA’s Flood Risk Emergency Plans for New Developments (the ADEPT guidance) has been removed from the Introduction section (this was formerly the 2nd para of the June 2020 SFRA as submitted to PINS). We also note that the text used in the June 2020 SFRA which states that “new development should not increase the burden on the Emergency Services or expose them to hazardous flooding when attempting to assist users of new developments” has been removed from the updated SFRA. We cannot see a reason why this has been removed.</p>	<p>Reference is still included. Text has been added "new development should not increase the burden on the Emergency Services or expose them to hazardous flooding when attempting to assist users of new developments".</p>	<p>AECO M</p>	<p>Yes</p>
<p>Applying the Exception Test – Assessment of site allocations Overview We are pleased to now see the addition of a bullet point for the fluvial risk “The ‘actual’ risk from the River Gipping in the future as a result of climate change; flood levels for the 1% AEP event including 65% climate change and the 0.1% AEP event including 25% climate change”; in addition to the bullet point for the residual tidal risk. We are pleased to see that Table 8-1 “Flood Risk info for site allocations” now includes columns for the maximum actual fluvial risk for both the 1% AEP 65% climate change “design flood” and the 0.1% AEP 25% climate change “extreme flood”. This includes flood levels to AODN for both events but has only included a flood hazard for residual risk tidal flooding. Where there is an actual risk for fluvial flooding, it would have been useful to have had a column for the flood hazard relative to a design flood as this will link to the consideration of safe access provision.The final column of this table summarises flood levels and requirements for Finished Floor Levels, safe refuge levels and whether safe access and egress can be achieved for a design flood (incl. cc). - We note that from the table it appears that safe access (not always dry) can be achieved for all sites at risk of flooding from the 1% AEP 65% cc fluvial flooding event.</p>	<p>Add hazard information to table.</p>	<p>AECO M</p>	<p>Yes</p>
<p>Flood Risk Management</p> <p>Basements – in para 4, we recommend that reference is also made to Basements not being permitted where the floor level is less than the 0.1% AEP fluvial flood level in 100 years’ time (in addition to the text that refers to the tidal level). This is because the flood extent for the 0.1% AEP cc event for fluvial flooding differs to that of the respective tidal event (especially in areas of Handford Road, Yarmouth Road and northwards towards Bramford Road).</p>	<p>Update text</p>	<p>AECO M</p>	<p>Yes</p>

<p>Riverside Development – The reference to the 9m distance is not correct. The SFRA will need to include up to date permitting advice i.e. The flood risk permitting distances are 8m from a main river fluvial watercourse and 16m from any tidal main river or flood defence structure (whether structure is tidal or fluvial), so it is likely that the Council may need to quote 16m as the permitting distance for most of the Gipping/Orwell riverside through Ipswich.</p> <p>Details here on permitting requirements can be found here:- https://www.gov.uk/guidance/flood-risk-activities-environmental-permits</p>	Update text	AECO M	Yes
<p>Flood Warning and Alert – We note that there are no changes to this section from June 2020 SFRA text. The Council could consider adding some text to this section to the effect that “in the near future, the EA propose to add a new flood warning area for the contingency of barrier failure and to review the current tidal flood warning areas and flood warning event thresholds for Ipswich”.</p>	Update text	AECO M	Yes
<p>Guidance for FRAs In the Flood Risk Assessment Checklist we would suggest an addition to the last line of the table with regard to Safe Refuge. The table currently refers to only the 0.1% AEP tide level at the end of the development’s lifetime, however there are some sites that are only at risk fluvial flooding and in those cases safe refuge should be available for the 0.1% AEP fluvial flood level at the end of the development’s lifetime. There may also be cases where a site is at risk of flooding from the 0.1% tidal and 0.1% fluvial events. In such cases the refuge level should be set with reference to the flood level for whichever source of flooding has the greatest depths i.e. the highest flood level from the two different sources of flooding.</p>	Update text	AECO M	Yes
<p>Flood Risk Policy and Development Management Approach In the section headed <u>Changes of Use</u>, it may be worth including a reference to some of the recent changes in permitted development, particularly those linked to changes of use e.g. offices into residential and the requirement that they still need to do FRAs.</p>	Update text	AECO M	Yes
<p>In the section headed <u>Basement dwellings</u> we would suggest that there is an addition of “Basement dwellings should therefore not be permitted where the floor level is below the 0.1% AEP tide or fluvial flood level in 100 years’ time (or whichever is greater where at risk from either source).</p>	Update text	AECO M	Yes

<p>In the section headed <u>Development Management Measures</u>, we are pleased to see that the table has been amended for inclusion of Finished Floor Level and safe access/egress for fluvial flooding requirements. The table also includes a reference to a 16m buffer strip for Riverside development (linking to permitting distances relative to flood defences or tidal rivers)</p>	<p>No change required.</p>		<p>N/A</p>
<p>Appendices Comments on Site Evaluations in Appendix F There are a series of minor modifications required to the site evaluations listed below. Most of these relate to using fluvial flood warning areas for the lower Gipping to inform the emergency planning section of the proforma where the sites in question are considered to be at risk from that source of flooding. The flood levels quoted are correct and we are satisfied with all of the Figures in Appendix A, Appendix C, Appendix D.</p>	<p>No change required.</p>		<p>N/A</p>
<p>IP001 – Land between 81-97 Fore Street - 3.97mAODN (0.1% cc) Not in Appendix F Site Assessment</p>	<p>No change required. This site is a SHELAA site but is not included as a Local Plan allocation and is covered by Table 8-1 the Exception Test.</p>		<p>N/A</p>
<p>IP003 - Waste tip Alf Ramsey Way - 3.17mAOD – 4.8mAODN (1% AEP cc) - 3.97mAODN (0.1% cc) Info looks OK. In the emergency planning section we would suggest that an additional FW area should be advocated linking to risk from fluvial Gipping – suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate in addition to the tidal flood risk flood warning area</p>	<p>Update text</p>	<p>AECO M</p>	<p>Yes</p>
<p>IP004 – Bus Depot, Sir Alf Ramsey Way - 3.17mAODN (1% AEP cc) - 3.97mAODN (0.1% cc) Proforma says fluvial hazard to the east of site is significant but examining the map the hazard is high to the north of the site on Sir Alf Ramsey Way and to the east of the site the flood hazard is low. In the emergency planning section we would suggest that an additional FW area should be advocated linking to risk from fluvial Gipping – suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate in addition to the tidal flood risk flood warning area</p>	<p>Update text</p>	<p>AECO M</p>	<p>Yes</p>
<p>IP011b – Smart Street/Foundation Street - 3.97mAODN (0.1% cc) Info looks OK</p>	<p>No change required.</p>		<p>N/A</p>

IP015 – West End Road Surface Car Park - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP028b – Land west of Greyfriars Road (Jewsons) - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP035 – Key Street/Star Lane/Burtons Site - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP037 – Island Site - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP043 – Commercial Buildings, Star Lane - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP045 – Holywells Road west/Toller Road - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP047 – Land at Commercial Road - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP054b – Land between Old Cattle Market and Star Lane - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP064a – Holywells Road (east) - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP098 – Transco south of Patteson Road - 3.97mAODN (0.1% cc) Info looks OK	No change required.		N/A
IP105 – Depot, Beaconsfield Road - 4.85mAODN (0.1% cc) Flood level info OK, but FW area should link to fluvial Gipping – suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate	Update text	AECO M	Yes
IP119 – Land east of West End Road - 4.82mAODN (1% AEP cc) - 4.97mAODN (0.1% cc) Flood level info OK, but opening paragraph indicates that the site is at a residual risk of fluvial flooding which contradicts info further down stating it is at an actual risk in the design flood. Suggest removal of word “residual” and change the benefit of defences to just the “current day” scenario for the 1% AEP fluvial flood. In the emergency planning section we would suggest that the most appropriate FW area should link to fluvial Gipping –	Update text	AECO M	Yes

<p>suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate</p>			
<p>IP120b – Land west of West End Road - 4.75mAODN (1% AEP cc) - 4.80m AODN (0.1% cc) Flood level info OK, but opening paragraph indicates that the site is at a residual risk of fluvial flooding which contradicts info further down stating it is at an actual risk in the design flood. Suggest removal of word “residual” and change the benefit of defences to just the “current day” scenario for the 1% AEP fluvial flood. In the emergency planning section we would suggest that the most appropriate FW area should link to fluvial Gipping – suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate</p>	<p>Update text</p>	<p>AECO M</p>	<p>Yes</p>
<p>IP132 – Bridge Street Northern Quays (west) - 3.97mAODN (0.1% cc) Info looks OK</p>	<p>No change required.</p>		<p>N/A</p>
<p>IP136 – Silo, College Street - 3.97mAODN (0.1% cc) Info looks OK</p>	<p>No change required.</p>		<p>N/A</p>
<p>IP178 – Island House, Duke Street - 3.97mAODN (0.1% cc) No proforma in App A, but levels OK</p>	<p>No change required. This site is a SHELAA site but is not included as a Local Plan allocation and is covered by Table 8-1 the Exception Test.</p>		<p>N/A</p>
<p>IP226 – Helena Road - 3.97mAODN (0.1% cc) Info looks OK</p>	<p>No change required.</p>		<p>N/A</p>
<p>IP279b(2) – South of BT Office, Bibb Way - 3.9mAODN (1% AEP cc) - 4.6mAODN (0.1% cc) Info looks OK</p>	<p>No change required.</p>		<p>N/A</p>

<p>IP354 – 72 (Old Boatyard) Cullingham Road - 4.47mAODN (1% AEP cc) - 4.7-4.9mAODN (0.1% cc)</p> <p>Flood level info OK, but opening paragraph indicates that the site is at a residual risk of fluvial flooding which contradicts info further down stating it is at an actual risk in the design flood. Suggest removal of word “residual” and change the benefit of defences to just the “current day” scenario for the 1% AEP fluvial flood. In the emergency planning section we would suggest that an additional FW area should be advocated linking to risk from fluvial Gipping – suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate in addition to the tidal flood risk flood warning area</p>	Update text	AECO M	Yes
<p>IP355 – 77-79 Cullingham Road - 4.16mAODN (1% AEP cc) - 4.49mAODN (0.1 cc)</p> <p>Flood level info OK, but opening paragraph indicates that the site is at a residual risk of fluvial flooding which contradicts info further down stating it is at an actual risk in the design flood. Suggest removal of word “residual” and change the benefit of defences to just the “current day” scenario for the 1% AEP fluvial flood. In the emergency planning section we would suggest that an additional FW area should be advocated linking to risk from fluvial Gipping – suggest The River Gipping from Needham Market to London Road Bridge, Ipswich most appropriate in addition to the tidal flood risk flood warning area</p>	Update text	AECO M	Yes
<p>Appendix E In Appendix E (Guidance for Developers concerning the preparation of Flood Management Plans) there is a reference to the Flood Warning Codes. It is worth noting that the “Flood Watch” code has since been replaced with the “Flood Alert” code.</p>	Appendix updated to reflect current Flood Evacuation Plan guidance on the IBC website which refers to Flood Alert. It will be reviewed as part of the forthcoming SPD review.	IBC	

Footnote to schedule

The Executive Summary of the SFRA has been updated, the timeline for which came about after the EA had submitted its formal letter representation to the SFRA, but changes have been made to the SFRA in order to provide clarity to definitions of fluvial flood risk for Ipswich.