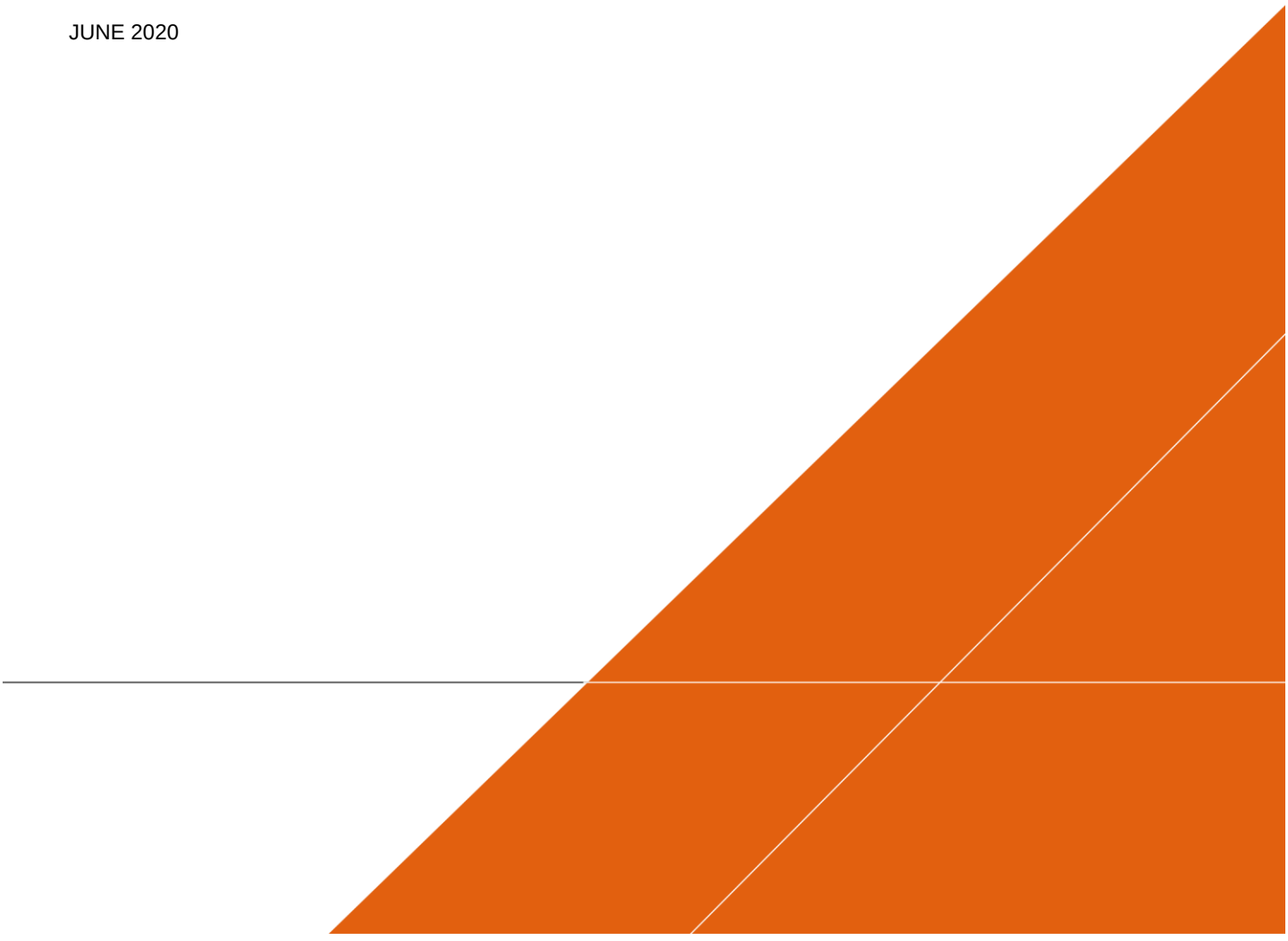
ARCADIS Design & Consultancy for natural and built assets

IPSWICH LOCAL PLAN 2018 – 2036 SUSTAINABILITY APPRAISAL ADDENDUM

Strategic Environmental Assessment and Sustainability Appraisal

Air Quality and Flood Risk Addendum

JUNE 2020



CONTACTS

JOSEPH EVANS
Environmental Consultant

Arcadis.
Level 1
2 Glass Wharf
Temple Quay
Bristol
BS2 0FR

VERSION CONTROL

Version	Date	Author	Checker	Approver	Changes
1	15.05.20	JE & NM	DH	DH	-
2	01.06.20	JE & NM	DH	DH	Second draft following Council review

CONTENTS

1 Introduction

1.1 Purpose of this Addendum

This document is an addendum to, and a continuation of, the Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) of the Ipswich Local Plan Review Final Draft. This document is not a standalone document and should be read in conjunction with the SA/SEA documents accessible on the Council's website (https://www.ipswich.gov.uk/content/ipswich-local-plan-review-final-draft-consultation).

1.1.1 Air Quality

The Council has commissioned an assessment of the potential air quality impacts of the proposed aligned local plans for the Ipswich Strategic Planning Area (ISPA), which includes the administrative areas of Ipswich Borough Council, Babergh District Council, Mid Suffolk District Council and Suffolk Coastal District Council. The Air Quality Assessment (AQA) focusses on the impacts of new plans on traffic movements and provides an assessment of the effects of air pollution at a large number of receptors throughout the study area.

The AQA was published in May 2020 after Regulation 19 consultation on the Final Draft Local Plan had closed. An important element of the SA that has accompanied the Council's plan-making process has been the prediction and evaluation of potential effects of the Plan on air quality in Ipswich. The results of the AQA are, therefore, highly pertinent to the SA as it provides a detailed and robust overview of locations in Ipswich that would be likely to be adversely affected by air pollution over the Plan period to 2036. One of the purposes of this SA Addendum is to review the recently published AQA and to update the SA as necessary in light of the findings of the AQA.

1.1.2 Flood Risk

In May 2011 the Council published a Level 2 Strategic Flood Risk Assessment (SFRA) that helped to inform their preparation and selection of land use allocations and planning policies. The SFRA identified potential sources of flooding that could affect Ipswich.

In April 2020 an update to the SFRA was prepared on behalf of the Council. The updated SFRA provides new evidence on the level of flood risk present at various sites that have been considered for allocation in the Plan. The results of the SFRA are therefore pertinent to the assessments of site allocations, policies and cumulative effects in the SA. This addendum reviews the findings of the SFRA and ensures that all assessments and findings in the SA with regards to flood risk are accurate in light of the results of the SFRA.

1.1.3 Housing Requirement

In March 2020 the Government published new affordability ratios. The effect of the new affordability ratio for Ipswich would be to increase the housing need figure from 445 dwellings per annum to 460 dwelling per annum. This change would alter the total housing target across the whole plan period from 8010 dwellings to 8280 dwellings. The Plan could accommodate this change with only minor changes to the capacity of a limited number of sites. It is considered that this change necessitates no amendments to the SA/SEA work and the existing SA/SEA documents and findings remain accurate.

Table 1.1: The SA process so far

Plan Stage	Sustainability Appraisal & Strategic Environmental Assessment Stage and requirements		Completed?
Evidence Gathering and Issues and Options	A. Setting the context and objectives, establishing the baseline and deciding on the scope	Identify related plans/programmes	*Scoping Report consulted on between 18th August – 30th October 2017*
		Identify environmental protection objectives	
		Baseline data and likely future trends	
		Identify sustainability issues and opportunities	
		Develop objectives, indicators and targets (SA Framework)	
		Prepare SA Scoping Report	
		Consult on the SA Scoping Report	
		Review scoping consultation responses and preparation of Final Scoping Report to inform next stage.	*Completed February 2018*
Draft Plan Regulation 18	B. Developing, refining and appraising alternatives and assessing effects C. Preparing SA Report	Assess Plan Vision and Objectives against the SA Framework	*Completed in the Interim SA Report consulted on between 16 January and 13 June 2019 and in this SA Report.*
		Assess growth and spatial options and their reasonable alternatives against the SA Framework	
		Assess preferred policy options, including allocations and their reasonable alternatives	
		Propose mitigation measures	
		Propose monitoring programme	
		Prepare Non-Technical Summary (NTS)	
		Prepare SA Report	
		Consult on the SA Report	
Final Draft Local Plan Regulation 19	C. Update and amend SA Report in light of changes to Plan D. Consultation on SA Report	Identify changes to Plan since previous stage	*Completed in the SA of the Final Draft Local Plan consulted on between January and March 2020*
		Determine relevance of changes to the Plan for the SA/SEA, including assessments of new or revised policies with cumulative and synergistic effects assessment updated accordingly	
		Update all other elements to the SA Report in light of the changes to the Plan	
		Ensure the SA Report is compliant with the SEA Directive in terms of requirements for an Environmental Report	
		Consult on the SA Report	
Submission to SoS for consideration	C. Update and amend SA Report in light of changes to Plan	Identify changes to Plan since previous stage	***We are here***
		Determine relevance of changes to the Plan for the SA/SEA, including assessments of new or revised policies with cumulative and synergistic effects assessment updated accordingly	
		Update all other elements to the SA Report in light of the changes to the Plan	
		Ensure the SA Report is compliant with the SEA Directive in terms of requirements for an Environmental Report	
Examination	C & D. Update and amend report in light of any Modifications to the Plan	Determine the relevance of any Modifications made to the PLAN as an outcome of Examination.	*Stage to be completed*
		Assess Main Modifications for their likely effects on SA Framework	
		Prepare addendum to the SA Report addressing the Main Modifications and any new significant effects on the Framework	
Adoption	E. Adoption Statement		*Stage to be completed*

2 Air Quality Assessment

2.1 Summary of the AQA Methodology

2.1.1 Modelling

The 2020 AQA applied the dispersion model ADMS-Roads to predict impacts on ambient air quality caused by road traffic emissions. The model uses detailed data on traffic flows on the local road network, land use characteristics and local meteorological conditions to predict pollutant concentrations at specific receptor locations. The AQA modelled several scenarios including:

- 2017 base year;
- 2026 without IBC Local Plan and with IBC Local Plan;
- 2036 without IBC Local Plan and with IBC Local Plan; and
- 2026 with IBC Local Plan and traffic mitigation.

Traffic data used in the AQA was derived from the Suffolk County Transport Model, which includes all ISPA local authorities. Vehicle emissions data was derived from Defra's Emissions Factors Toolkit. Meteorological data, such as wind speed and direction, was used to predict the transportation of pollutants and levels of dilution. Meteorological data was obtained from the Met Office observing station at Wattisham for 2017.

2.1.2 Receptors

The AQA predicted pollutant concentrations at two types of receptors; human receptors and designated habitat receptors.

Human receptors were selected to represent locations that would be likely to be exposed to pollutant concentrations and are locations that would be likely to experience the most noticeable changes in air quality with elevated pollution caused by road traffic emissions.

Designated habitat receptors include Ramsar sites, Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Sites of Scientific Special Interest (SSSIs), County Wildlife Sites (CWSs) Local Nature Reserves (LNRs), Local Wildlife Sites (LWSs), Nature Improvement Areas (NIAs), Ancient Woodland (AW) and veteran trees.

2.2 Summary of the AQA Results

2.2.1 Human Receptors

The AQA has determined that the majority of the human receptors would experience negligible air pollution impacts. Table 2.1 sets out the human receptors identified in the AQA as likely being subject to a non-negligible adverse effect in 2026 and 2036 with the Plan in place. These effects do not account for transport mitigation being in place.

Table 2.1: Human receptors identified in the AQA as being likely to be subject to a non-negligible adverse effect in 2026 and 2036

Reference and address of human receptors	2026 effect	2036 effect
R414 Northgate Street	Substantial Adverse	Substantial Adverse
R421 St. Margaret's Plain	Moderate Adverse	Moderate Adverse
R427 St. Margaret's Street	Moderate Adverse	Slight Adverse
R422 Foundry House Old Foundry Road	Slight Adverse	None
R421 St. Margaret's Plain	Moderate Adverse	Moderate Adverse
R427 St. Margaret's Street	Moderate Adverse	Slight Adverse
R608 The Wolsey Apartments College Street	Moderate Adverse	Slight Adverse
R609 Foundry Lane	Moderate Adverse	Slight Adverse
R610 Foundry College Street	Slight Adverse	Slight Adverse

Reference and address of human receptors	2026 effect	2036 effect
R619 Foundry Lane	None	Slight Adverse
R609 Foundry Lane	Moderate Adverse	Slight Adverse
R610 Foundry College Street	Slight Adverse	Slight Adverse
R619 Foundry Lane	None	Slight Adverse
R609 Foundry Lane	Moderate Adverse	Slight Adverse
R610 Foundry College Street	Slight Adverse	Slight Adverse
R619 Foundry Lane	None	Slight Adverse
R609 Foundry Lane	Moderate Adverse	Slight Adverse
R610 Foundry College Street	Slight Adverse	Slight Adverse
R619 Foundry Lane	None	Slight Adverse
R411 Electric House Lloyds Avenue	Slight Adverse	None
R510 St. Helens Street	Moderate Adverse	None
R511 St. Helens Street	Moderate Adverse	None
R522 Bond Street	Slight Adverse	None
R523 Bond Street	Slight Adverse	None
R528 Bond Street	Slight Adverse	None

2.2.2 Habitat Receptors

Different types of habitats are known to have different critical loads for atmospheric nitrogen concentrations. With the Plan in place, the Stour and Orwell Estuaries and Orwell Estuary transects are predicted to experience exceedances of the critical level in 2026 with changes in annual mean NOx that cannot be considered as imperceptible. Bridge Wood LNR, Valley Road LWS and Felixstowe LWS would also be likely to be subject to levels of atmospheric nitrogen deposition that exceed their critical loads. This assessment does not account for transport mitigation being in place. The assessment considered the potential air quality impacts of the Ipswich Local Plan Review proposals within the IBC district at: a) human receptors expected to experience the most substantial changes in traffic, and b) ecological receptors within designated habitat sites that are sensitive to changes in nitrogen deposition. The assessment accounted for road traffic forecasts without the Ipswich Local Plan Review proposals but with local plans implemented by other ISPA boroughs, and in-combination with the Ipswich Local Plan Review proposals. Using well established methodology and datasets for vehicle emissions and background pollutant levels, the air quality assessment established that the impacts at human and habitat receptors would - in nearly all locations - be negligible and imperceptible.

2.3 Updates to the SA and its Findings on Air Quality

2.3.1 Human Receptors – Site Allocations

Appendix E of the Final Draft SA Report that is accompanying the Submission of the Plan provides an assessment of site allocations proposed in the Plan. This includes an assessment of each site against SA Objective 7, which is *'To maintain and where possible improve air quality'.* Guide questions for the SA Objective include:

- *Will it protect and improve air quality?*
- *Will it avoid exacerbating existing air quality issues in designated AQMAs?*
- *Will it contribute to a healthy living environment?*

The assessments of the sites provide a prediction and evaluation of whether the potential development would maintain or improve air quality; exacerbate existing air quality issues including in AQMAs; and contribute towards a healthy living environment.

Fundamental to the assessments against SA Objective 7 has been whether development at the site would be likely to lead to new traffic movements; new construction that has high emissions; an increase in energy consumption; and an increase in household or business associated emissions.

The assessments of site allocations against SA Objective 7 presented in Appendix E of the published SA Report are considered to remain accurate in light of the results of the detailed AQA prepared by WSP. For example, where slight adverse or moderate adverse effects have been predicted in the AQA at a human receptor, site allocations in the Plan that are in proximity to this receptor have been recorded in the SA as having a minor negative effect on SA Objective 7.

There is one exception to this, which is associated with the human receptor R414 at 15 Northgate Street. The AQA predicts a substantial adverse effect as a result of air quality at this human receptor, with air pollution at this location a significant concern with or without the Plan. This is in part because the R414 receptor is within a street canyon. In light of this new evidence the SA assessment of the single site in proximity to this receptor, site allocation IP214, has been updated for SA Objective 7. The updated assessment for site IP214 against SA Objective 7 is provide below.

The updated assessment should be seen in the context of the SA methodology presented in Table 3-4 of the Main SA Report.

Effects key:

Major negative	Minor negative	Neutral	Positive/ negative	Uncertain	Minor positive	Major positive
--	-	0	+/-	?	+	++

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
IP214 Old Foundry Road	Derelict building.	**0.02**	12 dwellings.	Residential use.

	SA Objective Topics (See SA Framework)	Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
7	*To maintain and where possible improve air quality*	IP214 --	The proposed development and its associated transport movements and energy consumption would be likely to be a source of some degree of new air pollution. Access to public transport is very good, which may help to limit increases in air pollution associated with road transport. IP214 is partially within the Ipswich AQMA No.2 and so any new pollution here could make it increasingly difficult to achieve air quality improvement targets at the AQMA. The 2020 AQA found four receptors in proximity to IP214 where there would be air pollution impacts, including: • R414, Northgate Street: Substantial adverse effects in 2026 and 2036; • R421, St. Margaret's Plan: Moderate adverse effects in 2026 and 2036; • R427, St Margaret's Street: Moderate adverse effect in 2026 and slight adverse in 2036; • R422, Foundry House Old Foundry Road: Slight adverse effect in 2026 and none in 2036. New residents may therefore be exposed to a degree of air pollution that is harmful to their long-term health. *To reduce air pollution the development should include electric charging points and establish travel plans that could include car sharing initiatives and public transport. The provision of cycle storage and walking and cycling routes into and out of the Site would help to reduce emissions associated with transport. Further mitigation can be applied through reducing the amount of window opening in new buildings which face onto the road. It is also expected that development would conform with policy CS20, within which the council have committed to a Transport Mitigation Strategy.*	IP214 --	M-LT	M

2.3.2 Human Receptors - Cumulative Effects

The cumulative effects assessment presented in Table 3-11 of the Main Report is considered to be accurate in light of the new AQA evidence and is consistent with the findings and conclusions presented in the AQA. No changes to the cumulative effects assessment with regards to human receptors and SA Objective 7 is considered to be necessary.

2.3.3 Habitat Designations

The SA does not identify significant adverse air pollution effects on sensitive biodiversity designations as a result of a single policy or a single site allocation. This is considered to be accurate in light of the new AQA evidence and is consistent with the findings presented in the AQA. Amendments to the assessments of individual sites and policies presented in the Appendices of the Final Draft SA are therefore not considered to be necessary.

The AQA has predicted that the following habitat designations could be subject to a degree of air pollution over the Plan period that exceeds their critical loads:

- Orwell Estuary SSSI;
- Stour and Orwell Estuaries SPA;
- Stour and Orwell Estuaries Ramsar;
- Bridge Wood LNR; and
- Valley Road LWS; and Felixstowe LWS.

The cumulative effects assessment against SA Objective 13, '*To conserve and enhance biodiversity and geodiversity'*, which is presented in Table 3-11 of the Main Report, has been amended below in light of the new AQA evidence.

SA Objective 13 - To conserve and enhance biodiversity and geodiversity			
Duration of effect	Uncertainty	Reversibility	**Overall score**
S-LT	M	R	**-**

Cumulative effects of the Plan: The significant majority of sites allocated for development in the Plan will provide an opportunity to enhance the local biodiversity value, primarily due to the provision of GI and new habitats in currently brownfield locations of limited biodiversity value.

However, in some cases, and most notably within the large Garden Suburb, there could be an adverse impact on priority species and habitats due to the presence of agricultural land. The Garden Suburb would be expected to result in the loss of a significant quantity of greenfield, although the planned inclusion of a country park and other green infrastructure elements will help to counter this. In addition, as much of the site is regularly ploughed arable farmland, there is scope to enhance biodiversity through the creation of new landscape and green infrastructure features as identified in the Ipswich Garden Suburb SPD (2017).

Some sites allocated for development are adjacent to County Wildlife Sites, most commonly the River Gipping wildlife site, and adverse effects may arise from both the construction and occupation phases of development.

Various policies set out in the Plan would seek to ensure that overall biodiversity in the Borough is protected and enhanced over the Plan period, including CS4 which safeguards biodiversity assets as well as DM8, DM9 and DM10 which protect the natural environment, trees and hedgerow as well as green corridors.

The March 2020 AQA has identified potential effects on the following biodiversity designations as a result of new air pollution arising over the Plan period:

- Orwell Estuary SSSI;
- Stour and Orwell Estuaries SPA;
- Stour and Orwell Estuaries Ramsar;
- Bridge Wood LNR;
- Valley Road LWS; and Felixstowe LWS.

Should rates of atmospheric nitrogen deposition exceed the critical loads of these sensitive designations their functioning could potentially be at risk. However**,** considering impacts on annual mean NO_x concentrations at designated habitat sites by comparing the baseline year (2017), it is evident that the number of designated sites experiencing an exceedance above the critical level of 30µg/m^3 reduces considerably from 17 sites (2017), to nine sites by 2026 and then to eight sites by 2036. This trend is in the absence of targeted mitigation and is likely to be linked to improvements in vehicular emissions standards (for vehicles burning fossil fuels) and a predicted

shift towards use of low emissions vehicles. In accordance with DMRB guidance LA 105[1] there would be no significant effect on a European biodiversity designation as a result of air pollution.
Cumulatively and synergistically, it is considered to be likely that the Plan would have an increase in air pollution at the European sites as a result of the plan, but as these effects are not considered significant, the overall effect is considered to be minor adverse impact on this SA Objective. This conclusion is based on a worst case scenario i.e. without mitigation being in place. It is expected that development would conform with Policy CS20, within which the Council have committed to a Transport Mitigation Strategy, which would further reduce the potential magnitude of an effect.
Recommendation: *GI throughout the Borough should be joined in a coherent network that enables the movement of wildlife through the network and into or out of the Borough freely with minimal blocking off by roads or the built form. Best efforts should be made to ensure that the tree canopy in Ipswich increases over the Plan period, which can only be achieved by ensuring new developments include the provision of new GI that is in part comprised of tree planting. GI should be comprised of a diverse range of native species capable of supporting a diverse range of wildlife, including insects. Blue infrastructure such as wildlife rich ponds and streams should be protected and enhanced within the GI network. Measures should be adopted by the Council to help minimise air pollution associated with transport movements caused by the Plan and, specifically, minimises atmospheric nitrogen deposition at sensitive habitats.*

[1] Available online at: https://www.standardsforhighways.co.uk/dmrb/search?volume=11&section=3

3 Strategic Flood Risk Assessment

3.1 Summary of the SFRA Methodology

The SFRA seeks to collate relevant and up to date information on the risk of flooding to the Borough from all sources, taking into account the impact of climate change, in order to enable IBC to:

- Avoid inappropriate development in areas at risk of flooding;
- Steer development towards areas at lowest risk of flooding from all sources, through the application of the sequential test;
- Apply the exception test to differing land use allocations in areas identified as being at risk of flooding;
- Where development is necessary, ensure that development is made safe for its lifetime without increasing flood risk elsewhere;
- Safeguard land from development that is required, or likely to be required, for current or future flood management;
- Use opportunities provided by new development to reduce the causes and impacts of flooding (where appropriate through the use of natural flood management techniques);
- Where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seek opportunities to relocate development, including housing, to more sustainable locations; and
- Inform the Local Plan's Sustainability Appraisal.

The SFRA has done this by assessing the various water sources in the Borough and modelling their flooding probability against factors such as climate change, flood zones, peak river flow, cross boundary interactions and functional floodplain. This data can then be used to show the flood risk at any given point in the Borough and has therefore been applied, as presented in Appendix F of the SFRA, to accurately identify the level of flood risk are sites considered for allocation in the Plan.

3.2 Summary of the SFRA Results

The SFRA results show that some areas of the Borough are at risk of tidal flooding during surge conditions, a risk which is being exacerbated by rising sea levels. There are many flood defences in place in Ipswich due to it historically being prone to tidal, fluvial and surface water flooding. The areas currently considered to be at greatest risk include Swinburne Road, Norwich Road, Monton Rise, Bridgewater Road, Ellenbrook Road, Bixley Road, Holywells Road, Duke Street and Maidenhall.

The SFRA concludes that IBC, in their role as the 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.

The SFRA also provides guidance on development management measures for different types of development within each flood risk zone.

3.3 Updates to the SA and its Findings on Flood Risk

Appendix E of the Final Draft SA Report that is accompanying the Submission of the Plan provides an assessment of site allocations proposed in the Plan. This includes an assessment of each site against SA Objective 11, which is to *'Reduce vulnerability to climatic events and flooding'.* Guide questions for the SA Objective include:

- *The need to address pluvial, fluvial and coastal flood risk.*

The SA assessments of the sites provide an evaluation of whether the potential development would be in an area of existing tidal and fluvial flood risk, whether there is historic records of flooding or flood risk, any flood defences in place at the site, the residual flood risk and any surface water or groundwater flood risk.

Fundamental to the SA assessments against SA Objective 11 has been whether development at the site could lead to an increase or a decrease in the flood risk at the site e.g. if hardstanding is introduced to a greenspace this may alter the risk of surface water flooding.

Assessments of sites against SA Objective 11 in Appendix E of the Submission SA Report have been reviewed in light of the findings in the new SFRA, which are presented in detail in Appendix F of the SFRA. This is to ensure that the SA is accurate in light of the most recently available evidence with regards to flood risk in Ipswich, this will ensure the safety of any housing built on this land and ensure appropriate flood defences are put in place.

Overall, the assessments of site allocations against SA Objective 11 presented in Appendix E of the SA Report are considered to be accurate in light of the results of the detailed SFRA. For example, where slight adverse or moderate adverse effects have been predicted in the SFRA at proposed sites, the assessment for this site in the SA identifies a minor adverse effect against SA Objective 11.

There are six sites for which the assessment against SA Objective 11 has required a minor amendment as a result of the new SFRA, which includes IP031b, IP043, IP064a, IP098, IP150d and the Humber Doucy Lane Cross-Border Allocation. As per the amended assessments below, these are not necessarily the sites at the greatest risk of flooding, but rather are the sites for which the new SFRA provides information on flood risk that was not previously reflected in the SA assessments.

It is important to note that the overall effect, as indicated by the score in the below effects key, has not changed for any of these sites. Rather, the narrative text describing the likely effects on SA Objective 11 has been revised slightly to better reflect the results of the new SFRA. The updated assessment text should be seen in the context of the SA methodology presented in the Main SA Report.

For each of the six sites, the updated assessments against SA Objective 11 are presented below. These replace the assessments against SA Objective 11 for each of the six sites presented in Appendix E of the Submission SA Report. No other changes to the SA Report documents are required as a result of these minor revisions.

The SFRA and Exception Test prepared on behalf of the Council have helped to ensure that pluvial, fluvial and coastal flood risk have been comprehensively addressed through the Plan, in accordance with SA Objective 11, which is to *'Reduce vulnerability to climatic events and flooding'*.

Effects key:

Major negative	Minor negative	Neutral	Positive/ negative	Uncertain	Minor positive	Major positive
--	-	0	+/-	?	+	++

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
IP031b 22 Stoke Street	Car park	**0.18**	18 dwellings	Demolition of single-storey extension to former Defiance PH. Re-ordering of premises to provide two flats. Erection of buildings on land behind Defiance PH.

SA Objective Topics (See SA Framework)		Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
11	*Reduce vulnerability to climatic events and flooding*	--	The Site is in Flood Zone 3. This assessment is accurate in light of the SFRA (March 2020). *All developments in Flood Zone 3 would require an FRA. To manage flood risk, development should be designed to include green infrastructure and SUDS. The site layouts should be designed to avoid development in the floodplain. Appropriate safety measures such as safe refuge should be incorporated in accordance with Policy DM4.*	-	S-LT	M

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
IP043 Commercial Buildings, Star Lane	Car park and 'Hyper Cars Ipswich'.	**0.7**	50 dwellings.	Residential use and 20% (0.14ha) employment use.

SA Objective Topics (See SA Framework)		Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
11	*Reduce vulnerability to climatic events and flooding*	IP043 - -	IP043 has approximately 21% of its land in Flood Zone 3 and approximately 16% in Flood Zone 2. IP043 has a small area of land with low surface water flood risk in the south east of the site. The site is existing hardstanding and so the proposed development would be a good opportunity to improve site drainage and incorporate landscaping elements that contribute towards a reduced surface water flood risk as well as greater resilience to fluvial flooding. This assessment is accurate in light of the SFRA (March 2020). *A flood risk assessment of the site is likely required. To manage flood risk, development should be designed to include green infrastructure and SUDS. The site layouts should be designed to avoid development in the floodplain.* *Where possible, each site should be designed to avoid areas of highest flood risk.* *Appropriate safety measures such as safe refuge should be incorporated in accordance with Policy DM4.*	IP043 -	S-LT	L

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
IP064a Land between Holywells Road and Holywells Park	offices and light industry including vehicle workshop and car sales.	**1.2**	66 dwellings	Redevelopment is dependent on the appropriate relocation of existing uses

SA Objective Topics (See SA Framework)		Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
11	*Reduce vulnerability to climatic events and flooding*	--	Small area of the site is located within Flood Zone 3 – high risk. There are areas of low and medium surface water flood risk within the site boundary. The extent of green infrastructure proposed is unknown at this stage – brownfield site. Caution should be applied to Holywells East IP064 as while mapping included in this proforma illustrates risk from the River Orwell, there is a raised canal to the east which has not been fully mapped. The sloping areas of the site are mainly above Flood Zone 3. A high-level trunk sewer crosses the site. The embankment within the site is in poor condition, the outlet is likely to be too small. These risks require further consideration as part of a site-specific flood risk assessment. This assessment is accurate in light of the SFRA (March 2020). *All developments in Flood Zone 3 would require an FRA.* *To manage flood risk, development should be designed to include green infrastructure and SUDS. The site layouts should be designed to avoid development in the floodplain. Appropriate safety measures such as safe refuge should be incorporated in accordance with Policy DM4.*	-	S-LT	L

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
IP098 Transco, south of Patteson Road	Derelict yard.	**0.57**	62 dwellings.	Residential use.

SA Objective Topics (See SA Framework)		Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
11	*Reduce vulnerability to climatic events and flooding*	IP098 - -	IP098 is within Flood Zone 2 and Flood Zone 3. This assessment is accurate in light of the SFRA (March 2020). *All developments in Flood Zone 3 would require an FRA.* *To manage flood risk, development should be designed to include green infrastructure and SUDS. The site layouts should be designed to avoid development in the floodplain. Appropriate safety measures such as safe refuge should be incorporated in accordance with Policy DM4.*	IP098 -	S-LT	M

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
IP150d Land south of Ravenswood – Sports Park	Greenfield	**1.8**	34 dwellings	Part adjacent to Alnesbourn Crescent only. Low density as part of mixed use with sports park.

SA Objective Topics (See SA Framework)		Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
11	*Reduce vulnerability to climatic events and flooding*	--	Site is in an area of medium surface water flood risk (e.g. two small areas) The extent of green infrastructure proposed is unknown at this stage. Site is within EA Flood Zone 1 – low risk. This assessment is accurate in light of the SFRA (March 2020). *Undertake a Flood Risk Assessment for the site and the development should be designed to include green infrastructure and SUDS to reduce flood risk. The site layouts should be designed to avoid development in the floodplain. Appropriate safety measures such as safe refuge should be incorporated in accordance with Policy DM4.*	-	S-LT	L

Site Name & Ref	Existing use	Area (ha)	Proposal	Description
Humber Doucy Lane Cross-Border Allocation	Greenfield	**~23.62 (within IBC land)**	496 dwellings	Allocation for future development (within Ipswich Borough and Suffolk Costal Local Plan area) for housing delivery, appropriately phased with the delivery of the Ipswich Garden Suburb and its associated infrastructure, on the north-eastern perimeter of Ipswich adjacent to existing protected open spaces, playing fields and allotments. It is expected that development would not occur until the necessary access infrastructure has been provided for.

SA Objective Topics (See SA Framework)		Site Scores	Commentary *Recommendations/mitigation*	Residual Scores	Duration	Uncertainty
11	*Reduce vulnerability to climatic events and flooding*	+	The site is in Flood Zone 1 and is not at risk of surface water flooding. This assessment is accurate in light of the SFRA (March 2020).	+	S-LT	M

4 Conclusions

The SA has been reviewed in light of the new SFRA and AQA evidence documents in order to ensure that the assessment results are informed by the latest and best available evidence with regards to air quality and flood risk. The existing SA work can be accessed via the Council's website[2] and it should be emphasised that this Addendum is a continuation of the Final Draft Ipswich Local Strategic Environmental Assessment and Sustainability Appraisal (including Non-Technical Summary). This Addendum is not a standalone document.

IBC has adopted a robust approach to managing air quality and flood risk through the Plan in accordance with SA Objectives 7 and 11. The SA process has helped to identify the potential risks associated with air quality and flood risk for potential site allocations and this has helped to inform the Council's decision-making process with regards to which sites they would prefer to allocate. This Addendum has amended a limited number of the SA's findings and recommendations with regards to air quality and flood risk to ensure that the SA is consistent with, and accurate in light of the findings of, the most recent studies.

The assessments amended in this Addendum replace the assessments presented in the Final Draft Ipswich Local Strategic Environmental Assessment and Sustainability Appraisal (including Non-Technical Summary). All other elements of the Final Draft SA are already consistent with the new evidence documents and require no amendments.

4.1 Air Quality

This Addendum has provided minor amendments to two assessments in the to ensure that they are consistent with the new AQA:

- An update to the assessment of site allocation IP214 against SA Objective 7 due to the AQA's predicted air quality effects at nearby receptors; and
- An update to the cumulative effects assessment for SA Objective 13 due to the AQA's predicted air quality effects on habitat designations.

All other elements of the Final Draft SA are already consistent with the findings of the new AQA and required no amendments.

4.2 Flood Risk

Assessments related to flood risk in the Final Draft SA, which is accompanying Submission of the Ipswich Local Plan to 2036, are considered to be accurate in light of the new SFRA evidence and are consistent with the SFRA's findings, subject to very minor amendments for six sites assessments.

The six sites for which the SA assessment against SA Objective 11 has required a minor amendment as a result of the new SFRA include IP031b, IP043, IP064a, IP098, IP150d and the Humber Doucy Lane Cross-Border Allocation. These are not necessarily the sites at the greatest risk of flooding, but rather are the sites for which the new SFRA provides information on flood risk that was not previously reflected in the SA assessments. The assessments against SA Objective 7 for these sites replaces the assessment against SA Objective 7 for these sites presented in the Final Draft SA document. All other elements of the Final Draft SA are already consistent with the findings of the new SFRA and required no amendments.

[2] https://www.ipswich.gov.uk/content/ipswich-local-plan-review-final-draft-consultation

Arcadis Consulting (UK) Limited

Level 1
2 Glass Wharf
Temple Quay
Bristol
BS2 0FR

T: +44 (0)117 372 1200

arcadis.com