

REPORT

Fenland Level 1 Strategic Flood Risk Assessment

Client: Fenland District Council

Reference: PB9784-RHD-ZZ-XX-RP-Z-0001

Status: Final/F001

Date: June 2022

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Document title: Fenland Level 1 Strategic Flood Risk Assessment

Subtitle:
Reference: PB9784-RHD-ZZ-XX-RP-Z-0001
Status: F001/Final
Date: June 2022
Project name: Fenland SFRA and WCS
Project number: PB9784
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Date: December 2021

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Date: December 2021

Classification

Project related

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Acronyms

Acronym	Acronym description
AEP	Annual Exceedance Probability
AMP	Asset Management Plan
AMR	Annual Monitoring Report
BAP	(UK) Biodiversity Action Plan
BGS	British Geographical Society
CAMS	Catchment Abstraction Management Strategy
CDA	Critical Drainage Area
CFMP	Catchment Flood Management Plan
CROW	Countryside and Rights of Way Act
CSO	Combined Sewer Overflow
CWS	County Wildlife Sites
DEFRA	Department for Environment, Food and Rural Affairs
DG5	Director General Performance Measure 5
DPD	Development Plan Documents
DWF	Dry Weather Flow
DYAA	Dry Year Annual Average
DYCP	Dry Year Critical Period
EIA	Environmental Impact Assessment
FCERM	Flood and Coastal Erosion Risk Management
FMS	(Peterborough) Flood Risk Management Strategy
FDC	Fenland District Council
FRA	Flood Risk Assessment
FRMP	Flood Risk Management Plan
FRR	Flood Risk Regulations (2009)
FWMA	Flood and Water Management Act (2010)
HOF	Hands-off flow
HRA	Habitat Regulations Assessment
IDB	Internal Drainage Board

Acronym	Acronym description
l/p/d	Litres per person per day
l/h/d	Litres per household per day
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
NNR / LNR	National Nature Reserve / Local Nature Reserve
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
OAN	Objectively Assessed Need
PCC	Per Capita Consumption
PFRA	Preliminary Flood Risk Assessment
RBMP	River Basin Management Plan
RMA	Risk Management Authority
SAC	Special Area of Conservation
SFRA	Strategic Flood Risk Assessment
SHMA	Strategic Housing Market Assessment
SPA	Special Protection Area
SPD	Supplementary Planning Document
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
uFMfSW	Updated Flood Map for Surface Water
UKCIP	UK Climate Impacts Programme
WCS	Water Cycle Study
WFD	Water Framework Directive
WRC	Water Recycling Centre
WRMP	Water Resources Management Plan
WRLTMP	Water Recycling Long Term Management Plan
WRZ	Water Resource Zone

Executive Summary

Introduction

Fenland's growing population requires local, safe, and healthy housing and employment. Fenland District Council is actively engaged with this growth, fully responding and planning to ensure that the development to support this growth is undertaken sustainably and will allow for the delivery of sustainable communities. To facilitate this population growth, the Council is working on a new Fenland Local Plan, which will set out how the district will grow and change over the next 20 years, from 2020 to 2040.

Sustainable development in Fenland needs to take into account the risk of flooding and ensure that the water supply and sewerage system have sufficient capacity. Climate change also presents further challenges in terms of increased flood and drought risk and to the capacity of the water infrastructure network. The National Planning Policy Framework outlines that Local Plans should be supported by a Strategic Flood Risk Assessment (SFRA) and Local Planning Authorities should use the findings to inform strategic land use planning. A Water Cycle Study (WCS) is also recommended to provide evidence for the Local Plan on the constraints and requirements from potential growth on the local water infrastructure, and that the proposed growth targets can be met without adversely affecting the water environment.

This report presents the Level 1 Strategic Flood Risk Assessment (SFRA) for Fenland. An associated Outline Water Cycle Study (WCS) has also been developed at the same time, as a separate report. These reports have been prepared to inform the site selection process in the emerging Local Plan and aim to identify existing connections between planning and water related policies and needs in an integrated way. Both studies have used available information from Fenland District Council and its partners, including the Environment Agency, Cambridgeshire County Council (as the Lead Local Flood Authority), Anglian Water and the local Internal Drainage Boards (IDBs).

Where the Council is unable to allocate its development based on these studies, then further detailed studies in the form of a Level 2 SFRA and/or Detailed WCS may be required.

Development in Fenland

Based on the September 2021 assessment of Local Housing Need, approximately 9,823 dwellings are required to be built in Fenland between 2020 and 2040, an average of 517 new dwellings per year. This is calculated based on the Planning Practice Guidance's Housing Need Assessment (National Planning Policy Framework, Ref. 74), which sets out the government's standard methodology for assessing Local Housing Need (LHN). In addition to dwellings, the Council must allocate sites for other forms of development. The Employment Needs Assessment identifies a need for between 18,000 and 23,000 jobs requiring an allocation of 215 to 270 hectares of land.

The Council issued an initial call for potential sites in late 2019, as part of the 'Issues and Options' consultation. A second call was issued between July and September 2020. The Council's preliminary review of these sites and other sites known to be available for development identified a range of 'reasonable alternatives' for development, referred to as Growth Options. The Growth Options identified principally include sites for housing and employment development, although some proposals include a range or mix of potential uses.

This Level 1 SFRA has assessed all sites included in the Growth Options described in the table below, covering 202 sites in total. The emerging Local Plan will allocate sites based on the proposed Growth Options, considering the outcomes of relevant studies and Sequential Tests, such as the SFRA and the associated Outline WCS.

Option	Description
Growth Option 1	Baseline - This option only includes sites with existing planning permission. This option does not deliver sufficient growth to meet Fenland's housing needs and as such additional land needs to be allocated for development. Alternative options for this additional allocation are considered in Growth Options 2, 2A, 3 and 4.
Growth Option 2	Market town-led growth: This option concentrates growth principally in the towns of Wisbech, March, Whittlesey and Chatteris, providing only limited additional growth in villages.
Growth Option 2A	Additional growth option: This option was developed following an initial review of the suitability of the sites included in Growth Options 2, 3 and 4.
Growth Option 3	More growth in villages: This option allocates more sites in villages and excludes those sites of lesser suitability in market towns.
Growth Option 4	Strategic growth in certain villages: As Option 3, but also proposes strategic growth at Wimblington and at Coates and Eastrea.
Employment Option 1	Baseline option including sites suitable for employment development with existing planning permission.
Employment Option 2	Includes additional sites suitable for employment development.
Employment Option 2A	Refinement of Employment Option 2 based on updated information regarding the employment land requirement, and including existing industrial estates, business parks, employment clusters, etc. (allocated to regularise these uses and safeguard these locations for future employment development).

Flood Risk

Fenland is vulnerable to flooding from a variety of sources, with much of the area lying within Flood Zone 3. The market towns of March, Whittlesey, and Chatteris, around half of Wisbech, and many of the villages are located on 'islands' of high ground above surrounding lower-lying land. There is pumped drainage to most of the district, and flood defences are in place to minimise flood risk to existing development and agricultural land. Due to the historic drainage of the area, the majority of the land is at a lower level than the arterial drainage channels, creating a significant residual risk if the flood defences were to be breached or overtopped.

An assessment of the risk of flooding for all proposed development sites has been carried out as part of this Level 1 SFRA and the associated Outline WCS. This assessment includes the Sequential Test, through which the locations of the sites are reviewed against the Flood Zones Map, to enable development to be steered towards areas at lowest risk of flooding.

Of the 202 sites under consideration, 124 sites have more than 98% of their area within Flood Zone 1¹ – areas at lowest risk of flooding. A further 11 sites have less than 10% of their area outside of Flood Zone 1 and as such have been defined as being at low risk of flooding. These 135 sites could accommodate 11,818 dwellings, although not all of these sites are included in a single growth option. None of the Growth Options would enable Fenland District Council to achieve its growth targets of 9,823 sites by 2040 with only those sites that are located in Flood Zone 1.

Considering the 78 sites which are partly in Flood Zones 2 and 3, 5.1% of total the available area for these sites is outside Flood Zone 1. Dwellings are proposed for 39 sites which are partly located within Flood Zone 3 (high risk), and for 6 sites located within Flood Zone 2. There are also a further 7 sites which are located in Flood Zone 1 but which are at high risk from surface water flooding. In accordance with the NPPF, an Exception Test supported by further information from a more detailed Level 2 SFRA will be required to underpin decisions on allocation of development sites in Flood Zone 3, and sites at high risk from surface water flooding.

Further assessment of the risk of flooding from all sources has been carried out for sites included in Growth Option 2A and Employment Option 2A, which are currently the preferred Growth Options based on an initial assessment by the Council. The results of these assessments are included in Developer Guidance Sheets, provided as an Annex to this report. In accordance with the NPPF (Ref. 74), a site-specific Flood Risk

¹ Refer to Appendix B for definition of Flood Zones.

Assessment (FRA) will still be required for all applications for development in Flood Zones 2 and 3 or where there is a high risk of surface water flooding, and for development greater than 1 ha in Flood Zone 1. This is to ensure that the proposed development does not increase the risk of flooding on site and/or elsewhere and to demonstrate that a suitable assessment of any increased risk as a result of climate change has been undertaken. The expected requirement for a site-specific FRA is included in the Guidance Sheets.

Recommendations

It is recommended that more detailed flood risk information is prepared, in the form of a Level 2 SFRA, focussing on the 25 sites included in the preferred Growth Option which are at high risk of flooding and which do not currently have a site specific flood risk assessment, as follows:

- Wisbech and adjacent villages (6 sites)
- March and Chatteris and adjacent villages (14 sites)
- Whittlesey (1 site)
- Guyhirn and Coldham (4 sites)

The following policy recommendations should be considered by Fenland District Council in the development of the Local Plan:

- **Sequential approach to development:** It is recommended that the sequential approach is adopted for all future developments within Fenland District. New development and re-development of land should wherever possible seek opportunities to reduce the overall level of flood risk at a site.
- **Sequential and Exception tests:** Much of Fenland District is at high risk of flooding from tidal, fluvial and surface water sources. Proposed development sites will need to satisfy the Sequential Test, in accordance with the NPPF, and sites located in areas at risk of flooding will also need to pass the Exception Test. Fenland District Council should use the information in this SFRA to inform decisions on which development sites to take forward in their Local Plan.
- **Site-specific Flood Risk Assessments:** For developments that cannot be located in Flood Zone 1, more detailed assessment is needed to verify flood extent to inform the sequential approach within the site and demonstrate (where necessary) if the Sequential and Exception Tests are satisfied. Flood risk assessments are also required for developments larger than 1 hectare located within Flood Zone 1, to demonstrate that the risk of surface water flooding has been addressed appropriately. The latest climate change allowances should be taken into account. Residual risk (overtopping, breach and pump failure), and the impact on floodplain storage must be considered.
- **Surface water management and SuDS:** Developers should consult the Cambridgeshire Flood and Water SPD (Ref. 46), which provides guidance on the approach that should be taken to design new developments to manage and mitigate flood risk and include sustainable drainage systems (SuDS).
- **Flood resistance and resilience:** Resistance and resilience measures will be required if buildings are situated in the flood risk area. Developments should comply with the Environment Agency's guidance on finished floor levels. Safe access and egress to a locally identified refuge area will need to be demonstrated at all development sites. Flood warning and evacuation plans should be prepared for those areas known to be at risk of flooding.

A successful cooperation for a successful management

This report has been developed in partnership with key public and private stakeholders. The continued cooperation of these key stakeholders is essential for a successful management of the full range of water services infrastructure requirements, policy recommendations and additional guidance and supporting sustainable growth for Fenland.

Summary table: status and capacity of selected sites

A summary table is provided in Section 4 which outlines the status and capacity of the latest available list of individual sites included in the Growth Options, based on the assessments undertaken by this Level 1 SFRA and the associated Outline WCS. It is important to note that the assessment of the sites has been undertaken on an individual basis only. The assessment of cumulative impact has not been undertaken at this Level 1 SFRA stage.

1 INTRODUCTION

1.1 Background

Fenland's growing population requires local, safe, and healthy housing and employment. Fenland District Council (hereinafter referred to as the Council) is actively engaged with this growth, fully responding and planning to ensure that the development to support this growth is undertaken sustainably and will allow for the delivery of sustainable communities.

New developments need to be planned with regard to flood risk and ensure that the water supply and sewerage system have the capacity to supply and dispose of water safely without causing any additional flood risk or water supply/demand issues. To facilitate this population growth, the Council has started to work on a new Fenland Local Plan, which will set out how the district will grow and change over the next 20 years, from 2020 to 2040.

Royal HaskoningDHV has, in collaboration with Fenland District Council and other stakeholders, prepared this Level 1 Strategic Flood Risk Assessment (SFRA) and the associated Outline Water Cycle Study (WCS) to inform the site selection process in the Local Plan and support satisfying water related policies and needs.

1.2 A new Local Plan for Fenland

The new Local Plan is an important document that will ensure any future development is safe and can be supported with appropriate infrastructure as well as being viable for the local economy. It will replace the current Local Plan (Ref. 29), which was adopted in May 2014. When finalised, the new Local Plan will set a clear ambition for the Council and community as to where development should and should not go, and what sort of development is needed over the next 20 years.

1.3 This Level 1 SFRA and the associated Outline WCS

The National Planning Policy Framework (NPPF, Ref. 74) and associated Planning Practice Guidance for Flood Risk and Coastal Change (NPPG, Ref. 28) highlight the active role Local Planning Authorities (LPAs) such as Fenland District Council need to take to ensure that flood risk is assessed, avoided, and managed effectively and sustainably throughout all stages of the planning process. The NPPF outlines that Local Plans should be supported by a Strategic Flood Risk Assessment (SFRA) and Local Planning Authorities (LPAs) should use the findings to inform strategic land use planning.

A Level 1 SFRA should be carried out in local authority areas where flooding is not a major issue and where development pressures are low. The Assessment should be sufficiently detailed to allow application of the Sequential Test to the location of development and to identify whether development can be allocated outside high and medium flood risk areas, based on all sources of flooding. Where a Level 1 SFRA shows that land at low risk of flooding cannot accommodate all the necessary development, a Level 2 SFRA may be required to provide the information necessary for application of the Exception Test (paragraph 160, NPPF guidance, Ref. 74). A Level 2 SFRA should consider flood risk issues in more detail, including: flood probability; flood depth; flood velocity; rate of onset of flooding; and duration of flooding.

Water Cycle Studies (WCS) are recommended to provide evidence for a Local Plan that the growth targets proposed can be met without adversely impacting on the water environment. They make use of water and planning expertise to understand environmental and infrastructure capacity, so that required improvements can be planned for and implemented alongside new development, in a timely and phased manner.

The Council is aiming for a Local Plan that allows it to tackle challenges and constraints accompanying growth in an efficient and sustainable manner and to highlight opportunities for partnered approaches. The integrated preparation of this Level 1 SFRA and the associated Outline WCS is therefore in tune with this strategy, identifying existing connections between planning and water related policies and needs in a more integrated exercise than two separate documents. The preparation of these reports stimulated discussion between all stakeholders involved, facilitating a better understanding of the water issues in Fenland.

1.4 Study area

The study covers Fenland District, which is bounded by five planning authority areas: King's Lynn and West Norfolk District, South Holland District, Peterborough City, Huntingdonshire District and East Cambridgeshire District, as shown in **Figure 1-1** and **Map A: Study Area**. Unless otherwise specified, this report refers to Fenland District as 'Fenland'.

The Fenland area was once a large marshland with some higher level dry 'islands' where small settlements were located. In the 17th century a large-scale drainage project resulted in large areas of farmland being created from the drained marshlands. By the end of the 17th century, it became clear that the land was shrinking, eventually resulting in the features of raised rivers, clay ridges and clay islands (areas of higher ground, due to underlying geology) which are visible today. Management of surface water within the lower drained areas became necessary, resulting in large open areas of arable farmland and a landscape dominated by a system of drainage channels which are crucial for agriculture. These drainage channels are currently managed by Internal Drainage Boards (**Map P**).

The largest rivers flowing through Fenland are the River Nene and Great Ouse/Bedford River (**Figure 1-1**), which are both designated as main rivers and the responsibility of the Environment Agency in terms of flood

risk

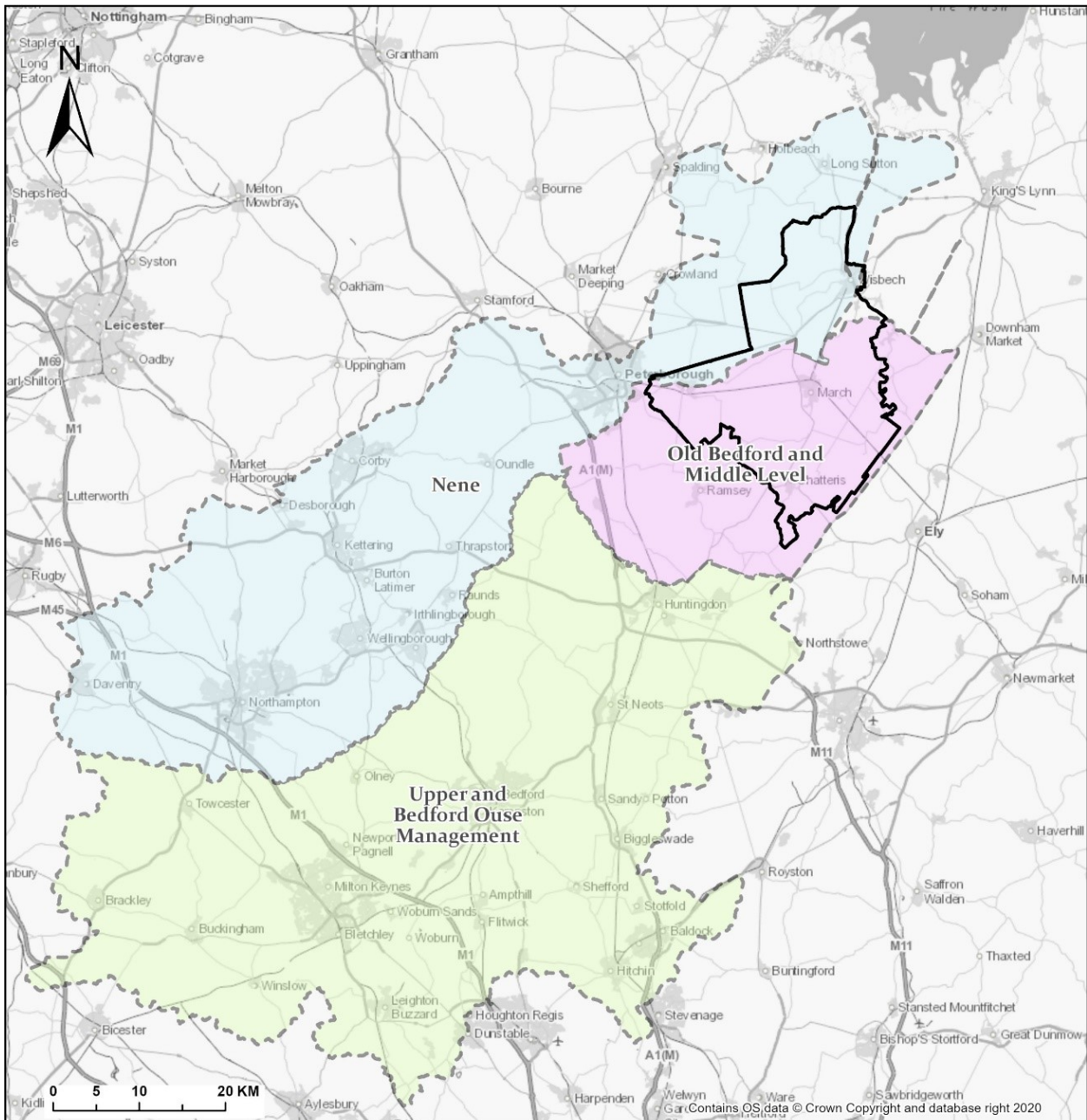


Figure 1-2). These rivers have large upstream catchments and are heavily influenced by activities outside the study area, particularly discharges from the urban areas of Peterborough, Kettering and Northampton which lie along the River Nene upstream of Fenland. Likewise, the Ouse System accommodates flows from Bedford, Milton Keynes and Huntingdon. Parts of the upstream catchments are within the Oxford Cambridge Arc, for which significant development is proposed. The Fenland area is important for the management of flows from these upstream catchments, and in regulating flows to the downstream catchments.

Fenland contains several important wetlands which are remnants of the original fenland landscape. These include the Ouse and Nene Washes, which are important flood storage areas and officially designated as reservoirs (see **Map M** for risk of reservoir flooding), as well as having designated Ramsar status as habitats for wildfowl.

Fenland is both one of the driest areas of the UK and one of the lowest lying, which makes it particularly vulnerable to the impacts of climate change including heightened risks of both drought and flooding.

1.5 Sources of data

The data used in the study has been obtained from several sources. A review of publicly available documents for the study area has been undertaken and refreshed with valuable up to date information obtained in consultation with all stakeholders involved:

- Fenland District Council
- Cambridgeshire County Council (LLFA)
- Environment Agency
- Anglian Water
- Internal Drainage Boards (IDB): North Level IDB, King's Lynn IDB, and Middle Level Commissioners.

A detailed list of all data used in the study and corresponding sources is presented in **Appendix A**.

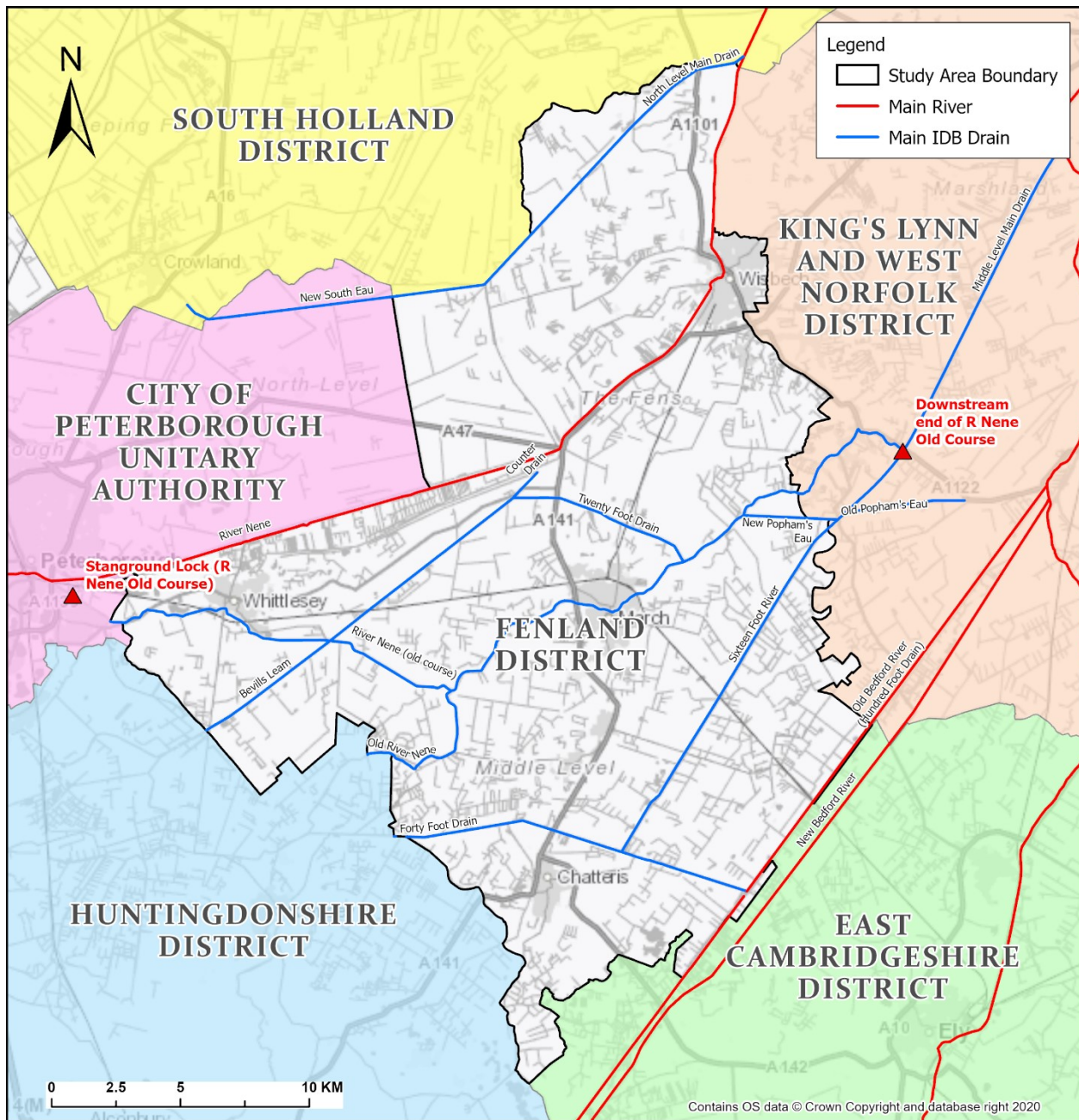


Figure 1-1: Study area boundary showing neighbouring planning authorities and watercourses (Source – Office for National Statistics, Fenland District Council)

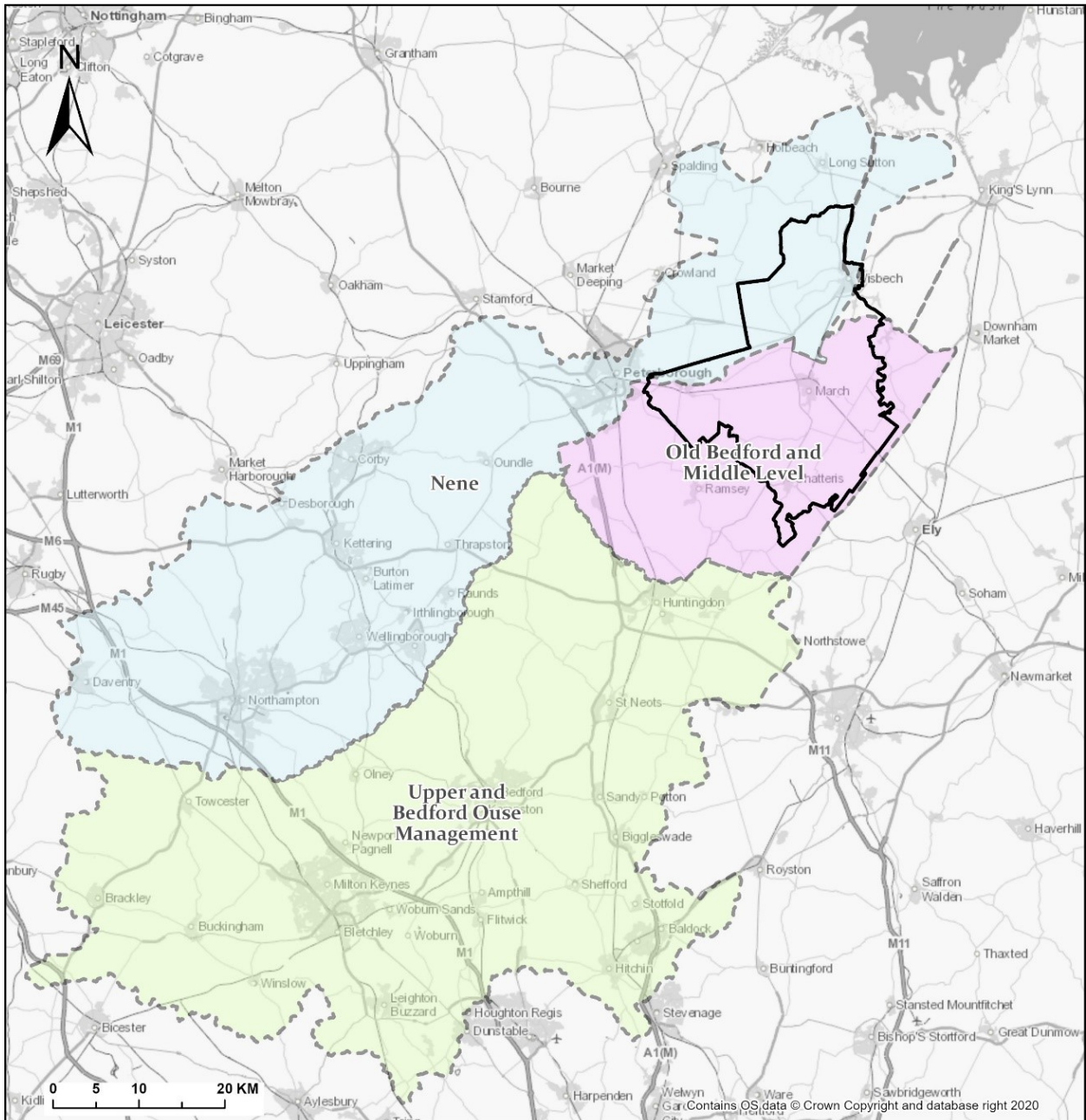


Figure 1-2: EA Operational Catchment Management Boundaries
(Source – Environment Agency, Ordnance Survey)

1.6 Data quality and assumptions

As with all studies of this nature, the analysis relies heavily on data and information supplied by third parties. This Level 1 SFRA has collated data from many parties, using the best available information at the time of preparation, including the most recent flood risk data and current national planning policy and guidance. Data has been checked and reviewed for accuracy wherever possible, but it is generally assumed that all data provided is accurate and up to date.

Much of this data is not static and is regularly being updated and revised as new information is collected or trends in development change. For example, the Environment Agency regularly reviews their hydrology, hydraulic modelling and flood risk mapping, and should be contacted to determine whether updated information is available prior to commencing a site-specific FRA. This study reflects a point in time and may need to be reconsidered at a later point, when data updates or review against changes to legislation or planning guidance may be required.

The maps of the various relevant flood risk datasets are subject to the usual limitations of flood risk data.

- The Flood Map for Planning (Ref. 79) shows the Flood Zones to a level of accuracy appropriate for viewing at a large scale and are not provided when the catchment area of the watercourse is less than 3km². Therefore, there may be locations which are shown to be outside of Flood Zones 2 and 3, but which may be at risk of fluvial flooding, with the lack of flood extent being due to a lack of data. In addition, the analysis undertaken by the Environment Agency to develop the Flood Map for Planning focuses on a limited number of flood event probabilities and climate change is not considered.
- The Environment Agency surface water flood maps do not provide an indicator of flood risk at an individual property or site level, and do not take into account the threshold heights of individual properties. Other sources of flood risk such as blocked drains or burst pipes are not included. The surface water flood maps provide a first estimate for the residual surface water flood risk, but don't take account of the actual capacity of the drainage systems and typically overestimate the extent of residual flood risk for piped drainage and underestimate it for open channel systems. The
- The extent of reservoir flood risk to the district is mapped by the Environment Agency, but information on hazard or speed of onset has not been assessed for this project.

No additional flood risk modelling has been carried out as part of this Level 1 SFRA.

1.7 Structure of this report

Section 1 provides an introduction to this report and **Section 2** sets out a brief description of the proposed development in Fenland based on the current version of the emerging Local Plan.

The specific technical information for each SFRA topic is presented **Section 3**, which covers all sources of flood risk in Fenland.

The outcomes of the assessment are set out **Section 4 and Section 5**, with the overarching assessment of the potential development sites provided in **Section 4** as a summary table. This summary table provides details of the assessment that has been undertaken for both the Level 1 SFRA and the associated Outline WCS, and is reproduced in both reports.

Reports, documents and websites referenced by this report are listed in chronological order of publishing at the end of the document, followed by various Appendices.

Maps of the key datasets relating to all aspects of the Level 1 SFRA and the associated Outline WCS are presented at a district-wide scale and provided alongside this report. **Developer Guidance Sheets** are also provided for all sites included in the preferred Growth Option.

Appendix A schedules the data sources which have been used to develop this report.

2 DEVELOPMENT IN FENLAND

This chapter presents a summary of the housing and employment growth forecast upon which the emerging Local Plan and this SFRA/WCS is being conceived.

2.1 Estimated growth

The required growth for the period covered by the new Fenland Local Plan (2020-2040) is approximately 9,823 new homes – an average of 517 new dwellings per year. This compares to a target of 550 dwellings per year in the 2014 Local Plan. Over the past five years (2016-2021), a total of 2,202 dwellings were delivered – an average of 440 new dwellings per year.

To calculate the yearly local housing need, the Council uses the Planning Practice Guidance's (of the National Planning Policy Framework, Ref. 74) Housing Need Assessment, which sets out the government's standard methodology for assessing Local Housing Need (LHN).

The assessment of local housing need is updated annually. This report is based on the assessment of housing need undertaken in September 2021. As such, the required housing need calculation may have changed since this report was prepared. Such changes should not impact on the sites assessed for this Level 1 SFRA, as the annual changes in the local housing need calculation are not usually significant.

2.1.1 Calculating Local Housing Need in Fenland

Based on 2014 Household Growth Projections (Ref. 44), the annual household growth for Fenland District Council is 426.1 households. Accounting for local wealth based on 'House Price to Workplace based earnings' database (Ref. 70), Fenland's local affordability ratio (LAR) of 7.41 is used to derive an Adjustment Factor:

$$\text{Adjustment Factor} = \left(\frac{7.41 - 4}{4} \right) * 0.25 = 0.213125$$

The Adjustment Factor is used to calculate the Annual Local Housing Need based on projected annual household growth, such that:

$$\text{Annual LHN} = (1 + 0.213125) * 426.1 = \mathbf{517} \text{ dwellings (rounded)}$$

Table 2-1: Fenland District Council Housing Factors
(Source – Fenland District Council)

Factor	Number
Annual Household Projection	426.1
Local Affordability Ratio	7.41
Adjustment Factor	0.213125
Annual Local Housing Need (LHN)	517 dwellings

The 2021 LHN figure of 517 dwellings per year is a reduction on the 2019 figure of 550 – the Local Housing Need that informs the new Local Plan for Fenland should always reflect this latest yearly recalculated figure; the current year forms the first year of any future outlook. The method used for calculating Fenland's yearly LHN is set out in detail in the Council's 'Five Year Housing Land Supply' report (Ref. 65).

In late March 2022 ONS published new data thereby requiring the housing need to be recalculated. From 2022 onwards, the standard method generates a local housing need for Fenland of 556 dwellings per annum. Due to the number of variables in the calculation and the need to re-consider this on an annual basis it is expected that the number of dwellings required will fluctuate to some degree from year to year.

Fenland District Council considers that the sites considered in this SFRA should have sufficient capacity overall to provide for its preferred growth option in the emerging Local Plan.

In addition to dwellings, the Council must allocate sites for other forms of development, such as employment. The Employment Needs Assessment has identified a need for between 18,000 and 23,000 new jobs, requiring allocation of 215 to 270 hectares of land.

2.1.2 Five-Year Housing Land Supply

In accordance with NPPF, Fenland District Council has identified the expected supply of specific deliverable sites to provide a minimum of five years' worth of housing need. This assessment is set out in full in the Council's 'Five Year Housing Land Supply' report (Ref. 65), with the deliverable sites summarised in **Table 2-2** below.

Table 2-2: Summary of Five-Year Housing Land Supply
(Source – Fenland District Council)

Site Category	Five Year Supply					Total Five Year
	Year 1	Year 2	Year 3	Year 4	Year 5	
Dwellings with detailed planning or outline permission on non-major sites	108	393	181	0	0	682
Dwellings with detailed permission on major sites	118	568	182	111	92	1,071
Dwellings with outline planning permission on major sites	0	0	343	205	181	729
Strategic Allocations & Broad Locations for Growth in adopted Local Plan	0	0	40	223	283	546
Dwellings approved subject to S106 legal agreement	0	0	0	0	0	0
Windfall allowance	0	0	94	188	188	470
Older people's accommodation	0	85	51	0	0	136
Total	226	1,046	891	727	744	3,634

The Council has identified land that is estimated to be capable of delivering 3,634 dwellings within the five year period, which is 920 more dwellings than the five year requirement (including a 5% buffer) of 2,716 dwellings.

2.2 Site allocations for development

In October 2019, the Council published the Issues and Options Consultation document for the emerging Fenland Local Plan. This consultation included an initial call for sites. A further call for sites was made between July and September 2020. Local agents, developers, landowners, Parish Councils and local residents were invited to suggest sites to be considered as potential allocations to meet the future growth.

The Council's preliminary assessment of these sites and other sites known to be available for development identified a range of 'reasonable alternatives' for development, referred to as Growth Options. The Growth Options principally include sites for housing and employment development, although some proposals suggest a range or mix of potential uses. The Growth Options do not have formal planning status and have

not been formally endorsed by Fenland District Council. They have been formulated by Council officers to inform the preparation of the Local Plan.

Table 2-3: Growth options considered by the Local Plan

(Source – Fenland District Council)

Option	Description
Growth Option 1	Baseline - This option only includes sites with existing planning permission. This option does not deliver sufficient growth to meet Fenland's housing needs and as such additional land needs to be allocated for development. Alternative options for this additional allocation are considered in Growth Options 2, 2A, 3 and 4.
Growth Option 2	Market town-led growth: This option concentrates growth principally in the towns of Wisbech, March, Whittlesey and Chatteris, providing only limited additional growth in villages.
Growth Option 2A	Additional growth option: This option was developed following an initial review of the suitability of the sites included in Growth Options 2, 3 and 4.
Growth Option 3	More growth in villages: This option allocates more sites in villages and excludes those sites of lesser suitability in market towns.
Growth Option 4	Strategic growth in certain villages: As Option 3, but also proposes strategic growth at Wimblington and at Coates and Eastrea.
Employment Option 1	Baseline option including sites suitable for employment development with existing planning permission.
Employment Option 2	Includes additional sites suitable for employment development.
Employment Option 2A	Refinement of Employment Option 2 based on updated information regarding the employment land requirement, and including existing industrial estates, business parks, employment clusters, etc. (allocated to regularise these uses and safeguard these locations for future employment development).

The emerging Local Plan sets the overall spatial distribution of development sites for each Growth Option and identifies the sites to meet the growth target and the overall distribution. **Table 2-4** and **Table 2-5** summarise the total number or area of development sites for each growth option. **Table 2-6** summarises the development sites for each growth option by individual settlement, showing the settlement hierarchy of each settlement. **Table 2-7** provides the full list of potential sites, identifying the relevant Growth Option(s) for each site. The location of these sites is provided in **Maps B to E: Potential Site Allocations** for each of the Growth Options.

It is envisaged that the Local Plan will allocate sites contained in either Growth Option 2, 2A, 3 or 4, plus existing employment areas and sites shown in Employment Option 2 or 2A. This SFRA and WCS has undertaken an assessment of the sites included in each of the Growth Options, covering 202 sites in total.

Table 2-4: High level distribution of housing growth for Fenland

(Source – Fenland District Council)

Settlement Hierarchy	Growth Option 1		Growth Option 2		Growth Option 2A		Growth Option 3		Growth Option 4	
	Number of dwellings (2020-40)	% of Housing Growth	Number of dwellings (2020-40)	% of Housing Growth	Number of dwellings(2020-40)	% of Housing Growth	Number of dwellings (2020-40)	% of Housing Growth	Number of dwellings(2020-40)	% of Housing Growth
Market Town	1,080	61.89	8,812	90.68	6,205	70.60	7,691	80.92	7,691	72.27
Large Village	159	9.11	260	2.68	738	8.40	742	7.81	995	9.35
Medium Village	475	27.22	585	6.02	1,683	19.15	866	9.11	866	8.14
Small Village A	31	1.78	61	0.63	118	1.34	188	1.98	1,073	10.08
Small Village B	0	0.00	0	0.00	45	0.51	17	0.18	17	0.16
Other settlement	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Open countryside	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Total	1,745	100	9,718	100	8,789	100	9,504	100	10,642	100

Project related

Table 2-5: High level distribution of employment sites for Fenland
(Source – Fenland District Council)

Settlement Hierarchy	Employment Option 1		Employment Option 2		Employment Option 2A	
	Area (ha) (2020-40)	% of Employment Growth	Area (ha) (2020-40)	% of Employment Growth	Area (ha) (2020-40)	% of Employment Growth
Market Town	57	99.38	294	73.92	418	60.06
Large Village	0	0.00	0	0.00	0	0.00
Medium Village	0	0.00	5	1.20	5	0.69
Small Village A	0	0.00	0	0.00	0	0.00
Small Village B	0	0.00	0	0.00	0	0.00
Other settlement	0	0.00	0	0.00	0	0.00
Open countryside	0	0.62	99	24.88	273	39.25
Total	57	100	398	100	697	100

Table 2-6 : Distribution of proposed sites by settlement
(Source – Fenland District Council)

Location	Settlement Hierarchy	Growth Option (Number of sites, 2020-2040)					Employment Option (Area, ha)		
		1	2	2A	3	4	1	2	2A
Benwick	Medium Village	0	0	0	57	57	0	0	0
Chatteris	Market Town	71	1,800	1,698	1,540	1,540	21	35	150
Christchurch	Small Village A	25	48	58	48	48	0	0	0
Church End	Small Village B	0	0	0	0	0	0	0	0
Coates	Medium Village	80	80	429	80	80	0	5	5
Coldham	Small Village B	0	0	11	11	11	0	0	0
Collet's Bridge	Small Village B	0	0	10	0	0	0	0	0
Doddington	Large Village	13	68	334	324	324	0	0	0
Eastrea	Small Village A	6	6	6	113	998	0	0	0
Elm	Medium Village	55	55	270	55	55	0	0	0
Foul Anchor	Other Settlement	0	0	0	0	0	0	0	0
Friday Bridge	Medium Village	0	6	230	230	230	0	0	0
Gorefield	Medium Village	19	19	49	19	19	0	0	0
Guyhirn	Small Village A	0	0	35	20	20	0	0	0
Leverington	Medium Village	229	325	425	325	325	0	0	0
Manea	Large Village	79	79	194	194	194	0	0	0
March	Market Town	394	3,410	2,661	3,312	3,312	8	90	100
Murrow	Small Village A	0	7	7	7	7	0	0	0
Newton	Small Village B	0	0	6	6	6	0	0	0
Open countryside	Open countryside	0	0	0	0	0	0	99	273
Parson Drove	Medium Village	5	13	43	13	13	0	0	0
Pondersbridge	Small Village B	0	0	0	0	0	0	0	0
Rings End	Small Village B	0	0	8	0	0	0	0	0
Tholomas Drove	Small Village B	0	0	10	0	0	0	0	0

Project related



Location	Settlement Hierarchy	Growth Option (Number of sites, 2020-2040)					Employment Option (Area, ha)		
		1	2	2A	3	4	1	2	2A
Turves	Small Village B	0	0	0	0	0	0	0	0
Tydd Gote	Small Village B	0	0	0	0	0	0	0	0
Tydd St Giles	Small Village A	0	0	12	0	0	0	0	0
Whittlesey	Market Town	256	1,691	875	928	928	10	23	23
Wimblington	Large Village	67	113	210	224	477	0	0	0
Wisbech	Market Town	359	1,911	971	1,911	1,911	18	146	146
Wisbech St Mary	Medium Village	87	87	237	87	87	0	0	0
Total		1,745	9,718	8,789	9,504	10,642	57	398	697
Additional net commitment		553	553	553	553	553			
Windfall allowance		1,500	1,500	1,500	1,500	1,500			
Total supply		3,798	11,771	10,842	11,557	12,695			

Table 2-7: Summary details of each site included in the Growth Options, October 2021

Site Ref.	Growth Option								2012 Site Status	Site Name	Location	Area (ha)	Proposed Use	Capacity
	1	2	2A	3	4	E1	E2	E2A						
40001		✓		✓	✓				Allocated	East Wisbech	Wisbech	47.7	Housing	950
40002							✓	✓	Allocated	South Wisbech	Wisbech	91.3	Mixed use	0
40004							✓	✓	Allocated	Nene Waterfront and Port	Wisbech	40.0	Mixed use	0
40005		✓		✓	✓				Allocated	South-east March	March	34.2	Housing	750
40007		✓		✓	✓				Allocated	West March	March	102.7	Housing	1500
40008							✓	✓	Allocated	March Trading Estate	March	78.4	Employment	0
40012		✓	✓	✓	✓				Allocated	N & S of Eastrea Road	Whittlesey	29.8	Housing	452
40017	✓	✓	✓	✓	✓				Approved	Land at 35 North End	Wisbech	0.0	Housing	11
40020	✓	✓	✓	✓	✓				Approved	Land W of Council Depot	March	4.0	Housing	14
40022	✓	✓	✓	✓	✓				Approved	Aware House Learning Dev Aids Ltd	Wisbech	0.2	Housing	10
40025	✓	✓	✓	✓	✓				Approved	Land E Of 46 Old Lynn Rd	Wisbech	5.6	Housing	149
40028	✓	✓	✓	✓	✓				Approved	Christchurch Memorial Hall	Christchurch	0.4	Housing	9
40031	✓	✓	✓	✓	✓				Approved	Former Kingswood Park Res. Home	March	1.0	Housing	24
40033	✓	✓	✓	✓	✓				Approved	Land S of Jones Lane	Eastrea	0.3	Housing	6
40036	✓	✓	✓	✓	✓				Approved	Land E of Davern Workwear Ltd	March	0.5	Housing	12
40037	✓	✓	✓	✓	✓				Approved	Davern Workwear Ltd	March	0.7	Housing	18
40038	✓	✓	✓	✓	✓				Approved	Land N of 28-30 High St	Manea	0.9	Housing	32
40041	✓	✓	✓	✓	✓				Approved	Land E of Berryfield	March	1.2	Housing	28
40042	✓	✓	✓	✓	✓				Approved	Land N of Whittlesey E of E Delph	Whittlesey	15.0	Housing	220
40043	✓	✓	✓	✓	✓				Approved	Land Rear of 36 High St	March	0.1	Housing	7
40045	✓	✓	✓	✓	✓				Approved	Land N of Orchard House	Wisbech St M	3.8	Housing	76
40048	✓	✓	✓	✓	✓				Approved	Lavender Mill Bungalow	Manea	1.1	Housing	29
40050	✓	✓	✓	✓	✓				Approved	Former Highways Depot	March	1.1	Housing	34
40052	✓	✓	✓	✓	✓				Approved	321 Wisbech Road	March	0.7	Housing	9
40053	✓	✓	✓	✓	✓				Approved	33 And Land N of 17-31	Elm	1.7	Housing	50
40054	✓	✓	✓	✓	✓				Approved	26 Bridge Street	Chatteris	0.0	Housing	5
40056	✓	✓	✓	✓	✓				Approved	College of West Anglia	Wisbech	6.1	Housing	137
40057	✓	✓	✓	✓	✓				Approved	Land W of 15 Fairbairn Way	Chatteris	1.8	Housing	50

Project related



Site Ref.	Growth Option									2012 Site Status	Site Name	Location	Area (ha)	Proposed Use	Capacity
	1	2	2A	3	4	E1	E2	E2A							
40059			✓							Approved	CFC Disposals Ltd	Christchurch	0.7	Housing	16
40060	✓	✓	✓	✓	✓					Approved	Land E of 38 March Road	Wimblington	3.3	Housing	5
40067	✓	✓	✓	✓	✓					Approved	Land E of 88 Sutton Road	Leverington	8.7	Housing	220
40070	✓	✓	✓	✓	✓					Approved	Land SE of 208 Coates Rd	Coates	2.7	Housing	60
40072	✓	✓	✓	✓	✓					Approved	Land W & S of 74 West St	Chatteris	2.8	Housing	58
40073	✓	✓	✓	✓	✓					Approved	Former Gas Distribution Centre	March	0.5	Housing	19
40074	✓	✓	✓	✓	✓					Approved	Land N Of 37-45 King S	Wimblington	1.7	Housing	25
40076			✓							Approved	Land E Of 11-21 Park Rd	Manea	1.2	Housing	13
40077			✓							Approved	Land N of The Green & N of 145-159 Wisbech Rd	March	4.9	Housing	118
40079		✓	✓	✓	✓					Approved	Land N & E of 1-3 Wimblington Rd	Doddington	1.1	Housing	13
40082					✓					Approved	Land N & W Of Elliott Lodge	March	0.4	Housing	13
40083			✓							Approved	Land W of Cedar Way (from Grove Gardens)	Elm	0.9	Housing	5
40087		✓	✓	✓	✓					Approved	Land N Of 3A-9 Bridge Lane	Wimblington	1.5	Housing	7
40093			✓	✓	✓					Approved	Land NW of 12 Knights End Rd	March	0.7	Housing	9
40103				✓	✓					New site	Trafford Farm	Wisbech St M	3.6	Mixed use	90
40104			✓	✓	✓					New site	Land at Gote Lane	Gorefield	1.2	Housing	30
40105			✓	✓	✓					New site	Rear of 131-137 Upwell Rd	March	0.5	Housing	9
40115					✓					New site	Land at Mill Hill	March	2.2	Housing	55
40117			✓							New site	Lake Drove	Eastrea	6.8	Housing	147
40126				✓	✓					New site	Land east of Berryfield	March	1.0	Housing	24
40127		✓	✓	✓	✓					New site	Well End	Friday Bridge	0.5	Housing	6
40133			✓							New site	Land E of Woodgate Rd	Leverington	3.9	Housing	96
40135		✓	✓	✓	✓					New site	Land N of March Road	Coldham	0.3	Housing	11
40137			✓							New site	Collett's Bridge Lane	Collet's Bridge	0.5	Housing	10
40139			✓	✓	✓					New site	Land to S of 4-40 Benwick Rd	Doddington	2.2	Housing	53
40140			✓	✓	✓					New site	Land W of Turf Fen Lane & S of Newgate St	Doddington	13.8	Housing	155
40143		✓	✓							New site	Land off Wood Street Ph3	Doddington	0.6	Housing	17
40145			✓							New site	Land at Wype Road	Eastrea	5.1	Housing	109
40147	✓	✓	✓	✓	✓					New site	Land at Gull Drove	Guyhirn	0.9	Housing	15
40150			✓	✓	✓					New site	Front Road	Murrow	0.5	Housing	7
40151			✓							New site	Land at Blue Lane	Wimblington	3.1	Housing	77
40152					✓					New site	Land north of King St	Wimblington	1.6	Housing	46
40158					✓					New site	Land at Meadowgate	Wisbech	1.2	Housing	10
40163			✓	✓	✓					New site	Chrysanthemum House	Wisbech	2.0	Care Home	77
40171					✓					New site	Land at Sunset, Station Rd	Wisbech St M	2.1	Housing	51
40173					✓					New site	Land off Wood St Ph2	Doddington	0.4	Housing	10
40185			✓							New site	Land to rear of 15 Westfield Rd	Manea	0.7	Housing	10
40190		✓								New site	Land to rear of No. 81	March	3.9	Housing	98
40194			✓							New site	Land SE of 433 Wisbech Rd	March	0.5	Housing	8
40198				✓	✓					New site	Minuet Phase 2	Coates	1.3	Housing	20
40207		✓	✓	✓	✓					New site	Land to rear of Neneside	Guyhirn	0.4	Housing	5
40211					✓					New site	Land S of Salisbury House, Blackmill Rd	Chatteris	4.2	Housing	100
40215				✓	✓					New site	Land south of Bridge Lane	Wimblington	2.3	Housing	50
40217		✓	✓	✓	✓					New site	Land south of Bridge Lane	Wimblington	3.1	Housing	66

Project related



Site Ref.	Growth Option								2012 Site Status	Site Name	Location	Area (ha)	Proposed Use	Capacity
	1	2	2A	3	4	E1	E2	E2A						
40223		✓	✓	✓	✓				New site	West Field	Manea	4.2	Housing	105
40229		✓	✓	✓	✓				New site	Land at Sparrow Lane	Wimblington	0.4	Housing	9
40233			✓						New site	Land S of 80 Coates Rd	Eastrea	8.2	Housing	177
40235						✓	✓		New site	Land N of Benwick Road	Doddington	1.1	Housing	31
40237				✓	✓				New site	Land off Eastrea Road	Whittlesey	27.2	Housing	584
40241							✓		New site	6 March Road	Rings End	0.2	Housing	8
40250			✓		✓				New site	Land S of 16A Doddington Rd	Benwick	1.1	Housing	31
40252		✓							New site	Land NE of March	March	13.7	Housing	294
40258			✓						New site	Land South of Coates Rd	Eastrea	10.9	Housing	233
40259							✓		New site	Land rear of 127 Wype Rd	Eastrea	5.0	Housing	107
40262		✓	✓	✓	✓				New site	Area behind High St shops, S of river	March	4.5	Mixed use	55
40263						✓	✓		New site	Land to west of Hereward Hall	March	0.6	Housing	19
40264		✓	✓	✓	✓				New site	Land to E of Norwood Road	March	1.8	Housing	50
40265		✓	✓	✓	✓				New site	Land north of March Road	Coates	10.8	Housing	232
40270			✓	✓	✓				New site	Land SW of proposed A605 realignment at Kings Dyke	Whittlesey	11.8	Mixed use	0
40274			✓	✓	✓				New site	Land NE of 39B-43 Ramsey Rd	Benwick	8.3	Mixed use	6
40276			✓						New site	Land N of Mill Hill Garage	March	0.4	Employment	0
40278		✓	✓	✓	✓				New site	Land east of March Road	Wimblington	3.9	Housing	97
40284		✓	✓	✓	✓				New site	Land off Wenny Road	Chatteris	26.0	Housing	260
40285			✓	✓	✓				New site	Land N of Knight's End Rd, E of A141	March	50.5	Housing	1200
40286						✓	✓		New site	Land N of Isle of Ely Way	March	4.0	Mixed use	0
40288		✓	✓	✓	✓				New site	Land W side of Fenland Way	Chatteris	15.2	Mixed use	20
40290		✓	✓	✓	✓				New site	Westry Retail Park	March	6.5	Employment	0
40300						✓	✓		New site	Land at Eastrea Road	Whittlesey	7.3	Housing	156
40302			✓						New site	Land at Swanbridge Farm	Parson Drove	0.4	Housing	8
40303		✓	✓	✓	✓				New site	Land at Selwyn Lodge Farm	Guyhirn	0.9	Housing	15
40305		✓	✓	✓	✓				New site	Land at Rookery Farm	Friday Bridge	3.5	Housing	87
40307		✓	✓	✓	✓				New site	Land at Willock Farm	Wisbech St M	0.7	Housing	10
40315		✓							New site	Hereward Hall	March	1.4	Mixed use	19
40316							✓		New site	Queen's Street Close Car Park	March	0.2	Housing	6
40319			✓						New site	Land East of Flint Way	Friday Bridge	6.4	Housing	137
40321		✓	✓	✓	✓				New site	Land East of Ben Burgess	Coates	4.8	Employment	0
40325		✓	✓	✓	✓				New site	Land rear of 2-8 Gibside	Chatteris	0.2	Housing	6
40326			✓	✓	✓				New site	Land East of 80 The Elms	Chatteris	3.7	Housing	90
40327			✓						New site	South Fens Enterprise Park	Chatteris	0.9	Employment	0
40328		✓	✓	✓	✓				New site	Land S of 104-178 March Rd	Coates	6.1	Housing	117
40335					✓				New site	Land to rear of 98-112 Drybread Rd	Whittlesey	0.3	Housing	11
40337				✓	✓				New site	Site at 5 North Street	Wisbech	0.1	Mixed use	10
40338					✓				New site	Nene Waterfront	Wisbech	1.6	Mixed use	178
40348				✓	✓				New site	Land to E & S of Drybread Rd	Whittlesey	8.4	Housing	179
40351		✓	✓	✓	✓				New site	Land to NW of Mill Hill Roundabout	Countryside	5.3	Employment	0
40364		✓	✓	✓	✓				New site	Hockland Road plot	Tydd St Giles	0.4	Housing	12
40366						✓	✓	✓	New site	Former Pike Textiles	Wisbech	0.6	Housing	21
40367						✓			New site	Womb Farm	Chatteris	8.4	Housing	248
40368						✓			New site	Land adjoining Parrock View	Newton	0.3	Housing	6

Project related



Site Ref.	Growth Option									2012 Site Status	Site Name	Location	Area (ha)	Proposed Use	Capacity
	1	2	2A	3	4	E1	E2	E2A							
40369						✓	✓	✓		New site	Land adjacent to the fern	Christchurch	0.3	Housing	10
40371						✓	✓	✓		New site	Land off Halfpenny Lane	Wisbech	14.7	Housing	316
40372						✓	✓	✓		New site	Land SW of Wype Road	Eastrea	6.7	Mixed use	144
40374						✓				New site	Land N of 47 King Street	Wimblington	1.5	Housing	33
40375						✓	✓	✓		New site	Land north of 17 Doddington Rd	Benwick	0.7	Housing	20
40376						✓	✓	✓		New site	Land South of Jones Lane	Eastrea	3.5	Housing	75
40380						✓				New site	Land opp. Coney Walk (Blue Lane)	Wimblington	1.2	Housing	34
40382						✓	✓	✓		New site	Land S of Knight's End Road and W of Wimblington Road	March	15.9	Housing	341
40384						✓				New site	Land South of Chatteris	Chatteris	67.7	Mixed use	1000
40386						✓	✓	✓		Approved	Freedom Motorcycles, Mill View	March	0.2	Employment	0
40390			✓							Approved	Land W of 30, Thorby Avenue	March	0.5	Employment	0
40393			✓							Approved	Land W of Roll out the Red	March	0.6	Mixed use	0
40398				✓	✓					Approved	Plot 4 Land SW of 47 Algores Way	Wisbech	0.2	Employment	0
40402								✓		Approved	Land S of Foster Business Park, Boleness Road	Wisbech	1.7	Mixed use	0
40403							✓	✓		Approved	Eclipse Scientific Group	Chatteris	0.7	Employment	0
40404								✓		Approved	Agrihold Farm Machinery UK Ltd, 1, Martin Avenue	March	0.8	Employment	0
40408								✓		Approved	Land W of Fenton Way & E of Iretons Way	Chatteris	8.7	Mixed use	0
40409					✓					Approved	SW of Doddington Road	Chatteris	0.2	Employment	0
40411		✓	✓	✓	✓					Approved	Land North Of 57, Thorby Avenue	March	0.5	Mixed use	0
40412							✓	✓		Approved	Land at Juncof A47 & Cromwell Rd	Wisbech	3.6	Mixed use	0
40415	✓	✓	✓	✓	✓					Approved	H L Hutchinson Ltd, Weasenham Lane	Wisbech	0.6	Employment	0
40416	✓	✓	✓	✓	✓					Approved	Land at Wombfarm	Chatteris	9.2	Mixed use	0
40417	✓	✓	✓	✓	✓					Approved	Lattersey Field, Benwick Rd	Whittlesey	9.3	Mixed use	0
40420	✓	✓	✓	✓	✓					Approved	March Cold Stores Limited 20-24 Marwick Road	March	3.0	Employment	0
40424	✓	✓	✓	✓	✓					New site	Station Rd by Grantchester House	Wisbech St M	0.3	Housing	9
40426	✓	✓	✓	✓	✓					New site	Land south of Benwick Road	Doddington	2.0	Housing	55
40427	✓	✓	✓	✓	✓					New site	Land S of Wimblington Rd	Doddington	3.2	Housing	40
40430	✓	✓	✓	✓	✓					New site	Westry Hall	March	2.5	Mixed use	62
40434	✓	✓	✓	✓	✓					New site	Land fronting Elm Road and S/W of Highfield House	March	0.3	Housing	9
40443	✓	✓	✓	✓	✓					Approved	Land at Showfields	Whittlesey	1.9	Housing	53
40444	✓	✓	✓	✓	✓					New site	28 Wimblington Road	Doddington	0.4	Housing	13
40446	✓	✓	✓	✓	✓					New site	Land W of 85 Wimblington Rd	March	0.8	Mixed use	18
40447	✓	✓	✓	✓	✓					New site	Womb Farm	Chatteris	1.9	Mixed use	53
40450	✓	✓	✓	✓	✓					New site	Slaves Hill	Doddington	4.7	Housing	100
40451	✓	✓	✓	✓	✓					New site	Land S of Brewery Close and Ingham Hall Gardens	Parson Drove	1.8	Housing	30
40453	✓	✓	✓	✓	✓					New site	Land W of 35 New Street	Doddington	0.5	Housing	11
40454	✓	✓	✓	✓	✓					New site	First Furlong Drove	Chatteris	70.5	Employment	0
40455	✓	✓	✓	✓	✓					New site	Honesome Road	Chatteris	11.2	Employment	0
40456						✓	✓	✓		New site	Ireton's Way	Chatteris	11.3	Employment	0
40457						✓	✓	✓		New site	Fenton Way	Chatteris	13.4	Employment	0
40458						✓	✓	✓		New site	Fenton Way Mandleys	Chatteris	8.4	Employment	0
40459						✓	✓	✓		New site	Short First Nightlayers	Chatteris	7.0	Employment	0
40463						✓	✓	✓		New site	Land NW of Syringa House	Christchurch	0.8	Housing	23

Project related



Site Ref.	Growth Option									2012 Site Status	Site Name	Location	Area (ha)	Proposed Use	Capacity
	1	2	2A	3	4	E1	E2	E2A							
40468						✓	✓	✓		New site	Coldham Wind Farm	Countryside	98.7	Wind energy	0
40469						✓	✓	✓		New site	Land next to Graysmoor Drove	Countryside	174.2	Wind energy	0
40491						✓	✓	✓		New site	Land off New Road	Chatteris	0.8	Employment	0
40496						✓	✓	✓		New site	Land at 16 Bridge Lane	Wimblington	0.5	Housing	11
40497						✓	✓	✓		New site	Metalcraft Business Park	Chatteris	14.6	Mixed use	0
40499			✓							New site	Land on W side of 92 London Rd	Chatteris	1.9	Housing	52
40502			✓							New site	Vacant site, Kings Dyke	Whittlesey	1.2	Mixed use	0
40503	✓	✓	✓	✓	✓					Approved	Land NE of 53 The Chase	Leverington	0.9	Housing	9
40504	✓	✓	✓	✓	✓					Approved	Land E of The Silverings	Parson Drove	0.4	Housing	5
40505	✓	✓	✓	✓	✓					Approved	22 London Road	Chatteris	0.3	Housing	7
40506	✓	✓	✓	✓	✓					Approved	11-12 High Street	Wisbech	0.0	Housing	15
40509	✓	✓	✓	✓	✓					Approved	Wisbech Vehicle Exchange	Wisbech	0.2	Housing	9
40511	✓	✓	✓	✓	✓					Approved	Nelson House, 22 Norwood Rd	March	0.1	Housing	5
40513	✓	✓	✓	✓	✓					Approved	Old British Gas Depot	Wisbech	0.5	Housing	19
40514	✓	✓	✓	✓	✓					Approved	Land North Of 3A-15	Gorefield	0.5	Housing	5
40517	✓	✓	✓	✓	✓					New site	15 Station Road	March	0.1	Housing	26
40518	✓	✓	✓	✓	✓					Approved	Land N of The Barn, High Road	Wisbech St Mary	0.3	Housing	5
40519	✓	✓	✓	✓	✓					Approved	Land E of 133 High Street	Chatteris	0.3	Housing	9
40520	✓	✓	✓	✓	✓					Approved	Land NW of Nemphlar Begdale Rd	Countryside	0.9	Traveller site	0
40521	✓	✓	✓	✓	✓					Approved	Dennicks Yard Back Road	Gorefield	2.4	Housing	14
40522	✓	✓	✓	✓	✓					Approved	18 Westfield Road	Manea	0.2	Housing	5
40523	✓	✓	✓	✓	✓					Approved	72 - 74 High Street	March	0.1	Housing	9
40524	✓	✓	✓	✓	✓					Approved	WH Feltham & Son, Cawood Close	March	0.6	Housing	9
40525	✓	✓	✓	✓	✓					Approved	Land SW of 1-23 Springfield Ave	March	1.6	Housing	40
40526	✓	✓	✓	✓	✓					Approved	158 Stonald Road	Whittlesey	1.3	Housing	18
40527	✓	✓	✓	✓	✓					Approved	Land N&S Of Grosvenor House, Grosvenor Road	Whittlesey	0.1	Housing	9
40528	✓	✓	✓	✓	✓					Approved	Land W Of 36 Peterborough Rd	Whittlesey	0.3	Housing	9
40529	✓	✓	✓	✓	✓					Approved	Land N of Stoneleigh 22A Eaton Estate	Wimblington	1.4	Housing	30
40530						✓	✓	✓		Approved	134A Ramnoth Road	Wisbech	0.5	Housing	9
40531						✓	✓	✓		Approved	Land W of Sunset Rooms Station Rd	Wisbech St M	0.3	Housing	6
40532						✓	✓	✓		Approved	Land NE of 1 Ashley Industrial Est	Whittlesey	0.4	Employment	0
40533						✓	✓	✓		Approved	Land S of Newberry, Roman Bank	Countryside	0.4	Employment	0
40534						✓	✓	✓		Approved	Land SE of Burrall Plas Tec Ltd	Wisbech	7.5	Employment	0
40535						✓	✓	✓		Approved	Gaul Farm Industrial Units	March	1.0	Mixed use	0
40536						✓	✓	✓		Approved	Land NE Of 25 Cromwell Rd	Wisbech	2.0	Mixed use	0
40537						✓	✓	✓		Approved	Storage Building at Dagless Ltd, N of Brigstock Road	Wisbech	1.9	Employment	0
40538						✓	✓	✓		Approved	11 Europa Way	Wisbech	0.8	Employment	0
40539						✓	✓	✓		Approved	Unit W of Jacks, Fenland Way	Chatteris	1.7	Employment	0
40540			✓							Approved	38 Whittlesey Road	March	0.7	Employment	0
40541			✓							Approved	Coleseed Business Complex, Upwell Road	March	0.6	Employment	0
40322/ 40306R			✓							New site	Revised proposal for sites 40322 and 40360R	Elm	10.0	Housing	215
40373/ 40498R		✓	✓							New site	Revised proposal for sites 40373 and 40498	Leverington	4.3	Housing	100

3 FLOOD RISK

3.1 Planning and flood risk legislation and policy

3.1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF, Ref. 74) was updated in July 2021. The framework is now embedded in the planning system and was part of reforms to make the planning process less complex, more accessible, and supportive of sustainable development. It provides the framework within which local councils can produce their local plans, including flood risk criteria for future development.

The NPPF (paragraph 159-160) states that *“Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.*

Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards.”.

The Planning Practice Guidance on Flood Risk and Coastal Change (NPPG, Ref. 28) supports the NPPF with technical guidance on how the policy should be implemented. Key definitions from Section 1 of the NPPG include:

- “Areas at risk of flooding” for fluvial (river) and sea flooding are principally land within Flood Zones² 2 and 3. It can also include an area within Flood Zone 1 which the Environment Agency has notified the local planning authority as having critical drainage problems; and
- “Flood risk” is a combination of the probability and potential consequences of flooding from all sources, including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources.

Flood Zones, Vulnerability Classifications and Compatibility

NPPG makes use of the concepts of Flood Zones, Vulnerability Classifications and Compatibility in order to assess the suitability of a specific site for a certain type of development. Definitions of these terms are provided in **Appendix B**.

The Sequential Approach

Both the NPPF and PPG highlight the importance of the Sequential Approach to flood risk which should be carried out at all stages of the planning process from Local Plan preparation to details of land uses on particular sites as part of planning proposals.

The Sequential Test

According to the NPPF (paragraph 162), *the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.*

² Refer to Appendix B for definition of Flood Zones.

Figure 3-1 below shows the process through which the Sequential Test is applied for Local Plan preparation. The diagram refers to Tables 1, 2 and 3, which are the following Tables from the NPPG:

- Table 1: Flood Zones³;
- Table 2: Flood Risk Vulnerability Classification; and
- Table 3: Flood risk vulnerability and flood zone 'compatibility'.

These tables are a key starting point for determining planning applications and are provided in **Appendix B**.

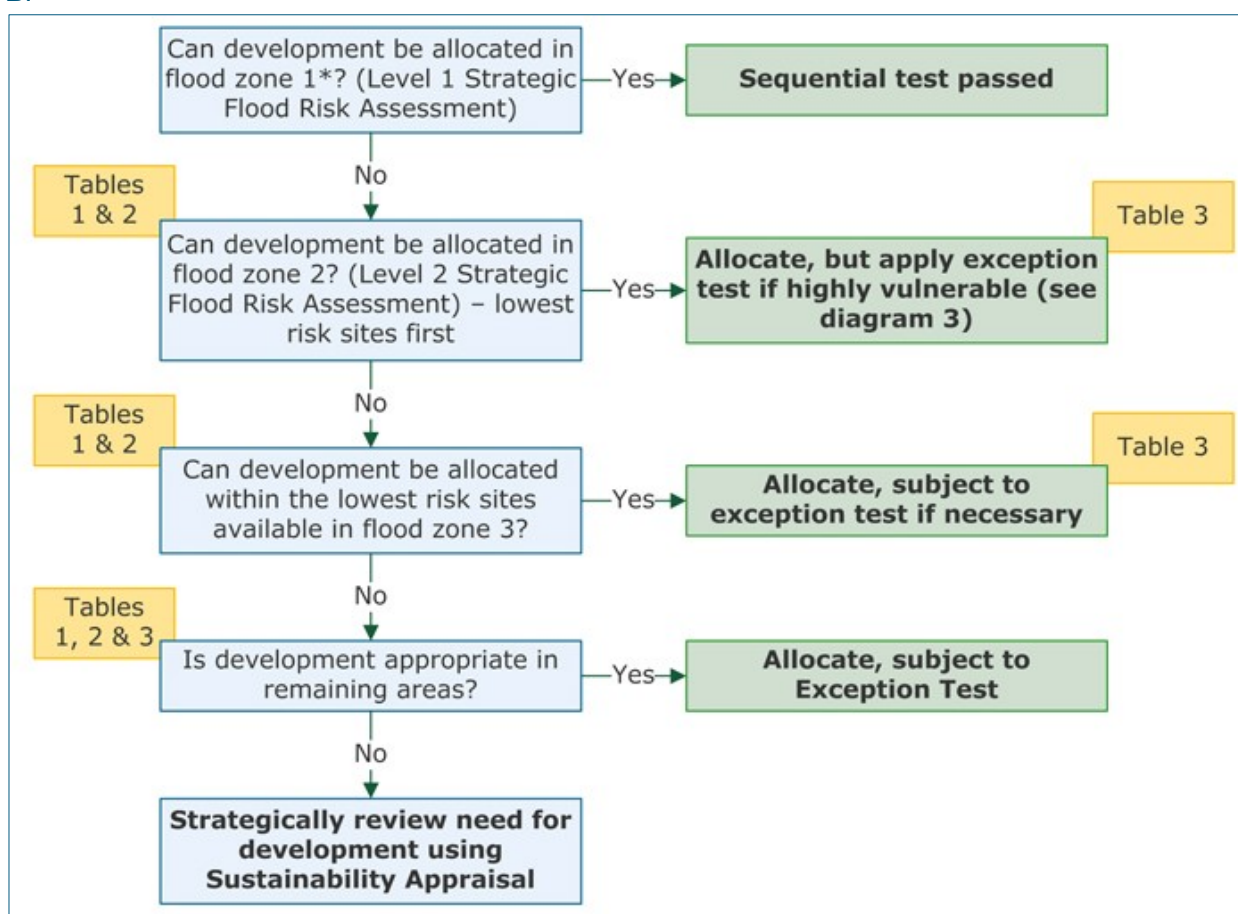


Figure 3-1: Application of Sequential Test to Local Plan preparation (NPPG Diagram 2)
(Source – National Planning Policy Framework)

* Note: When assessing whether development can be allocated in Flood Zone 1, potential flood risk from all other sources also needs to be considered.

The Exception Test

The Exception Test, as set out in the NPPF (paragraphs 161 to 167, NPPF guidance), is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available. Provision of the information required for the application of the Exception Test is beyond the scope of this Level 1 SFRA. It lies within the scope of a Level 2 SFRA, as it requires a more detailed assessment.

³ Refer to Appendix B for definition of Flood Zones

3.1.2 Climate Change

The NPPF (paragraph 149) clearly emphasises the need for addressing climate change impacts, to deal with the increased and new risks of flooding within the lifetime of planned development. The Environment Agency's online document *Flood risk assessment: climate change allowances* (Ref. 80), first published in February 2016 and subjected to regular updates, provides advice on predictions of anticipated change for peak river flow, peak rainfall, sea level rise and offshore wind speed and extreme wave height to support the NPPF. These changes need to be accounted for when demonstrating how flood risk will be managed now and over the development's lifetime. The climate change allowance guidance provided below is based on the July 2021 update to the Environment Agency advice. The climate change allowance guidance is regularly updated and as such should be reviewed online to ensure the current approach is applied.

The climate change allowances are based on climate change projections and different scenarios of carbon dioxide (CO₂) emissions to the atmosphere. Different values for peak river flow and peak rainfall intensity have been determined for different epochs (periods of time) over the next century - 2015 to 2039, 2040 to 2069 and 2070 to 2115. Different epochs are used for sea level rise – 2000 to 2035, 2036 to 2065, 2066 to 2095 and 2096 to 2125.

For the study area, peak river flows, peak rainfall intensity and sea level rise are applicable and are discussed below. The expected lifespan of a development determines the range to be considered in each case. The 2070 to 2115 epoch is the assumed default for all residential and most other developments. Where developers seek to use other epochs, discussions and agreement should be sought with the Environment Agency, the Lead Local Flood Authority and the Council.

Peak river flow allowances

The peak river flow allowances show the anticipated changes to peak flow for each management catchment provided as a percentage. Management catchments are sub-catchments of river basin districts. Fenland is within the Anglian River Basin District, and covered by the Nene and Old Bedford and Middle Level

management catchments, as shown in

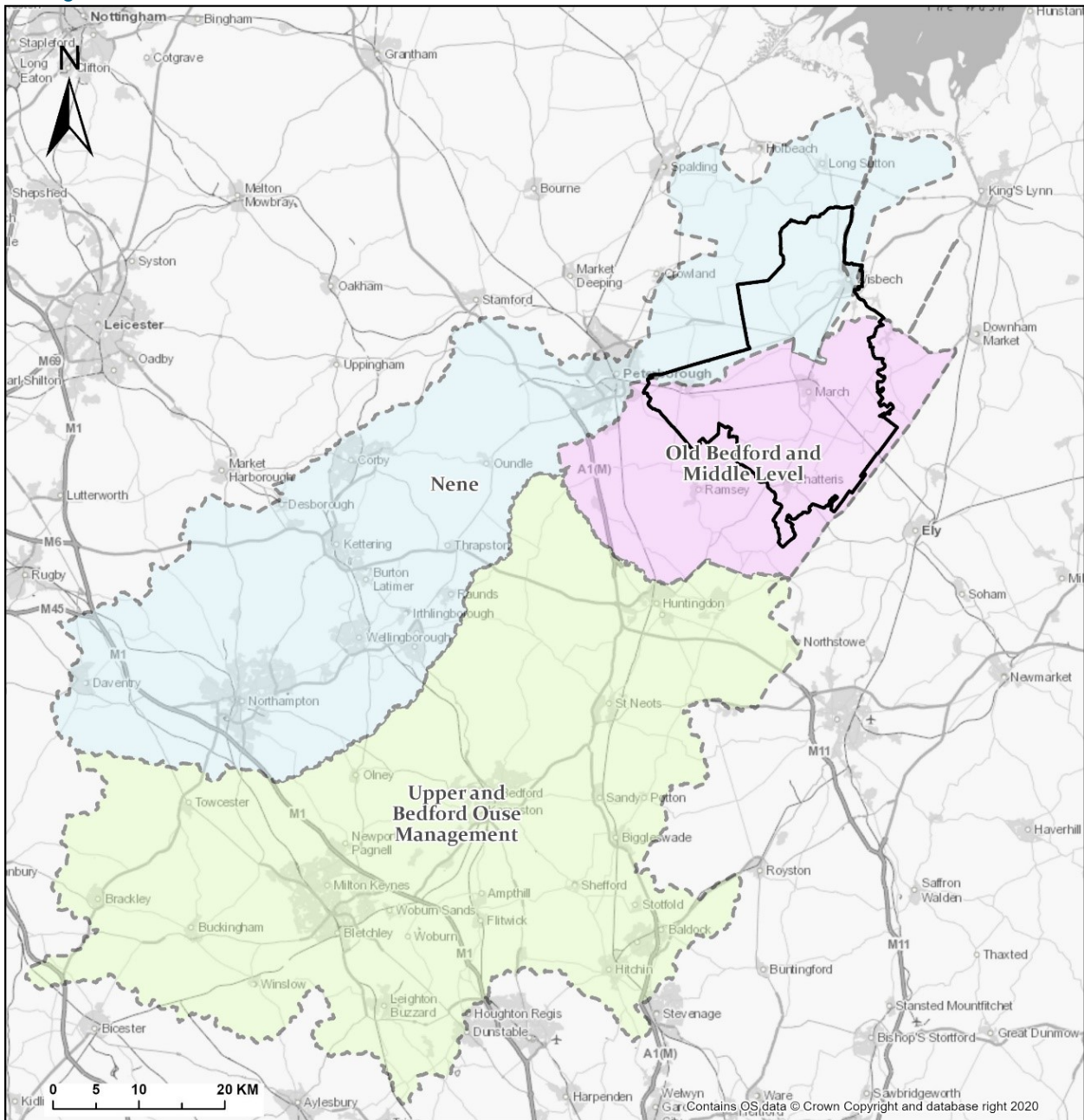


Figure 1-2.

The range of allowances is based on percentiles, which is a measure used in statistics to describe the proportion of possible scenarios that fall below an allowance level. For example, the 50th percentile value is the point at which half of the possible scenarios for peak flows fall below that value and half fall above it.

For the management catchments covering Fenland, the Upper End (90th percentile), Higher Central (70th percentile), and Central (50th percentile) allowance categories are relevant. The application of each category depends upon the flood risk vulnerability classification for the type of development and the flood zone in which it is located over the lifetime of the proposed development.

Where the development type requires the assessment of more than one climate change allowance category, the results of both assessments should be displayed clearly within the site-specific FRA provided where necessary with planning applications. In setting finished floor levels in the final site layout, clear justification should be provided for the choice of climate change allowance category. If development is considered appropriate when not in accordance with flood zone vulnerability categories, then the upper end allowance should be used. For less vulnerable development the higher central allowance should be used as the basis for designing safe access, escape routes and places of refuge.

Table 3-1: provides the applicable peak river flow allowances for the management catchments covering Fenland. **Table 3-2** provides further explanation on when each allowance should be used.

Table 3-1: Peak river flow allowances for Fenland management catchments

(Source – Environment Agency)

Management catchment	Total potential change anticipated in peak river flow	Allowance category		
		Central (50 th percentile)	Higher (70 th percentile)	Upper end (95 th percentile)
Nene	2015 to 2039	-2%	4%	18%
	2040 to 2069	-7%	0%	17%
	2070 to 2115	4%	13%	36%
Upper Bedford and Middle Level	2015 to 2039	3%	9%	23%
	2040 to 2069	-3%	4%	22%
	2070 to 2115	6%	15%	39%

Table 3-2: When to use each climate change allowance category

(Source – Environment Agency)

Flood Zone ⁴	Vulnerability classification ⁵				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Flood Zone 2	Higher	Central	Central	Central	Central
Flood Zone 3a	Higher	Development should not be permitted	Central	Central	Central
Flood Zone 3b	Higher	Development should not be permitted	Development should not be permitted	Development should not be permitted	Central

Peak rainfall intensity allowance

Increased rainfall affects river levels and land and urban drainage systems. The guidance states that for flood risk assessments and strategic flood risk assessments in England an assessment should be made of both the central and upper end allowances to understand the range of impact. **Table 3-3:** shows the Peak rainfall intensity allowances for small and urban catchments:

Table 3-3: Peak rainfall intensity allowance in small and urban catchments

(Source – Environment Agency)

Allowance category	Percentile	Total potential change anticipated in peak rainfall intensity		
		2015 to 2039	2040 to 2069	2070 to 2115
Upper end	90 th	10%	20%	40%

⁴ Refer to Appendix B for definition of Flood Zones.

⁵ The Vulnerability Classifications are shown in Table B2 in Appendix B.

Central	50 th	5%	10%	20%
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Sea level rise

Fenland is at risk from tidal flooding, so sea level rise must be considered. The Dog in a Doublet Sluice is situated to the north of Whittlesey and is the tidal limit of the River Nene approximately 45km from the sea. However, land on both sides of the River Nene and to the east of the Dog in a Doublet Sluice may be affected by sea level rise due to the increased risk of overtopping or breaching of the flood defences in Fenland.

The Nene Washes Flood Storage Reservoir lies to the south of the River Nene, to the east of Peterborough. It plays an important role in managing fluvial flood risk during times when high river flows coincide with high tides and the River Nene is unable to discharge freely into the Wash. The significance of this fluvial-tidal interaction on the severity of flooding in the Fens will only increase in future as climate change-induced sea level rise will result in the Mean High Water Spring tide level on the River Nene increasing from 3.8m AOD (2017) to 3.93m AOD in 2035, 4.27m AOD in 2065 and 5.28m AOD in 2125 (Ref. 80). **Table 3-4** sets out the sea level rise allowances for the Anglian river basin district.

Table 3-4: Sea level rise allowances for Anglian RBD
(Source – Environment Agency)

Allowance category	Percentile	Sea level rise allowance for each epoch, mm / year			
		2000 to 2035	2036 to 2065	2066 to 2095	2096 to 2125
Upper end	90 th	7	11.3	15.8	18.1
Higher Central	50 th	5.8	8.74	11.6	13

The upper end climate change allowances for peak river flood flow and mean sea level should be used in site specific assessments for developments that are very sensitive to flood risk and with lifetimes beyond the end of the century. This includes infrastructure projects or developments that significantly change existing settlement patterns such as urban extensions and new settlements.

3.1.3 Flood Risk Legislation

EU Floods Directive and Flood Risk Regulations

The Directive 2007/60/EC on the assessment and management of flood risks (EU Floods Directive, Ref. 5), requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent, assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. The Directive has been transposed into English law by the Flood Risk Regulations 2009 (FRR, Ref. 11), which outlines the requirement for the Environment Agency and Lead Local Flood Authorities (LLFA) to create Preliminary Flood Risk Assessments (PFRAs) and Flood Risk Management Plans (FRMP), with the aim of identifying Areas of significant Flood Risk. The Fenland PFRA was superseded by the previous Fenland SFRA (Ref. 18) and the Anglian FRMP, which are discussed below under Flood Risk Management Policies.

Flood and Water Management Act 2010

The Flood and Water Management Act (FWMA, Ref. 13) was passed in 2010. It aims to improve both flood risk management and the way we manage our water resources by creating clearer roles and responsibilities. This includes a new lead role for Local Authorities in managing local flood risk (from surface water, ground water and ordinary watercourses outside Internal Drainage Districts) and a strategic overview role of all flood risk for the Environment Agency. IDBs have permissive powers to manage water levels within their respective drainage districts. The implications of the FWMA provide opportunities for a more

comprehensive, risk-based approach on land use planning and flood risk management by Local Authorities and other key partners.

Land Drainage Act 1991 (amended in 1994)

The Land Drainage Act (Ref. 3) aims to consolidate the enactments relating to internal drainage boards, and to the functions of such boards and of local authorities in relation to land drainage. It requires that a watercourse be maintained by its owner in such a condition that the free flow of water is not impeded. The riparian owner must accept the natural flow from upstream but need not carry out work to cater for increased flows resulting from some types of works carried out upstream, for example a new housing development.

Section 21 of the Land Drainage Act requires a consent from the Land Drainage Authority (Lead Local Flood Authority or the IDB where they exist) before erection of any obstruction to flow in an ordinary watercourse such as a mill dam or weir, or the erection or removal of a culvert within an Ordinary Watercourse.

Water Resources Act 1991

This Act (Ref. 4) aims to prevent and minimise pollution of water and confers the functions from the Land Drainage Act 1991 in relation to main rivers on the Environment Agency. The policing of this act is the responsibility of the Environment Agency. Under the act it is an offence to cause or knowingly permit any poisonous, noxious or polluting material, or any solid waste to enter any controlled water. Silt and soil from eroded areas are included in the definition of polluting material. If eroded soil is found to be polluting a water body or watercourse, the Environment Agency may prevent or clear up the pollution and recover the damages from the landowner or responsible person.

The requirement for a Flood Defence Consent from the Environment Agency before erection or alteration of an obstruction, culvert or other structure over, under or in a Main River required by the Water Resources Act 1991 has been amended by Schedule 25 of the Environmental Permitting (England and Wales) Regulations 2016 (Ref. 47), and its associated Environment Agency Guidance, Flood risk activities: environmental permits (Ref. 53).

National Flood and Coastal Erosion Risk Management Strategy

The Environment Agency National strategy (Ref. 69) has been developed collaboratively with a wide range of organisations and sets out the approach to delivering government's policies for flood and coastal erosion risk management. It includes practical measures to be implemented by risk management authorities, partners and communities.

The Strategy has three core ambitions concerning future risk and investment needs:

1. Climate resilient places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change
2. Today's growth and infrastructure resilient in tomorrow's climate: Making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as resilient infrastructure.
3. A nation ready to respond and adapt to flooding and coastal change: Ensuring local people understand their risk to flooding and coastal change, and know their responsibilities and how to take action.

A case study within the Strategy discusses the future of the Fens, an area including Fenland District and adjacent low-lying areas in eastern England. The case study recognises that in recent years, flood and water management in the Fens has been undertaken in a somewhat piecemeal approach and reactive manner. With many of the flood and water management structures in the Fens coming to the end of their design life, and considering climate change projections, a more strategic and long-term approach is needed, which will require changes to current flood risk and drainage activities as well as significant

investment. An adaptive approach is needed to balance the needs of people, the environment and agriculture and to identify the decisions which need to be taken now and in the future.

3.1.4 Local Flood Risk Management Policy

Anglian Flood Risk Management Plan

FRMPs cover flooding from main rivers, the sea and reservoirs. The current Anglian FRMP (Ref. 52) was prepared in March 2016 by the Environment Agency in alignment with local FRMPs. This joint approach ensures that information at a strategic and local level about all sources of flood risk is combined so the two documents complement each other.

Cambridgeshire Flood Risk Management Strategy

Cambridgeshire County Council have responsibility for developing a Local Flood Risk Management Strategy (LFRMS) for the county, which includes Fenland District Council, in a manner that complements and provides a more local context to the Anglian FRMP. The LFRMS for Cambridgeshire is titled the Cambridgeshire's Local Strategy for Flood Risk Management 2015-2020 (2015, Ref. 41). This will be due for review and updating in the near future.

Cambridgeshire Flood and Water Supplementary Planning Documents (SPD)

The Cambridgeshire Flood and Water SPD has been prepared by Cambridgeshire County Council (as the Lead Local Flood Authority) in conjunction with the other Cambridgeshire local planning authorities (Ref. 46). The SPD provides guidance on the approach that should be taken to design new developments to manage and mitigate flood risk and include sustainable drainage systems (SuDS). The rationale behind this SPD is to reduce the impact of these developments on the water environment as per national planning policy and guidance and local planning policies, which require that new development must be appropriately located, well designed, and managed to take account of climate change and flood risk. Fenland District Council adopted the SPD on 15 December 2016, as a supplementary document to the adopted Fenland Local Plan (Ref. 29).

Catchment Flood Management Plans

Catchment Flood Management Plans (CFMPs) help to understand the scale and extent of flooding now and in the future, and they set policies for managing flood risk within the catchment. First published in 2009, CFMPs should be used to inform planning and decision making by key stakeholders such as the Environment Agency, local authorities, Internal Drainage Boards (IDBs), water companies, transportation planners, etc.

CFMPs consider all types of inland flooding, from rivers, groundwater, surface water and tidal flooding. They take account of the likely impacts of climate change, the effects of land use and land management, and sustainable development. Policies highlight when water should be allowed to flood or where current flood risk measures should be reduced. Development should therefore be focused towards the more 'sustainable' areas in terms of lower risk of flooding or where flood risk management is considered viable within the short and long-term plans.

Fenland falls within two main river catchments: River Nene and the Great Ouse. The Fenland District Council area is also within the Fens in both CFMPs (Ref. 10, Ref. 14), a man-made landscape reclaimed from coastal and estuarine wetlands. Within both CFMPs, the preferred policy for the corresponding Fenland sub-areas is Policy Option 4, i.e. *"Areas of low, moderate or high flood risk where we are already managing the flood risk effectively but where we may need to take further actions to keep pace with climate change."*

Cambridgeshire Surface Water Management Plan (SWMP)

The Cambridgeshire SWMP (Ref. 31) was updated in 2014 and outlines the preferred strategy for the management of surface water in Cambridgeshire, establishing a long-term action plan and influencing future strategy development for maintenance, investment, planning and engagement.

Potential hotspot areas in Fenland were first reviewed in terms of historic, current and future flood risk. Through a prioritisation exercise, March was identified as a 'wet spot' requiring ongoing monitoring and engagement with 3rd parties to develop flood resilience planning and mitigation measures.

March Surface Water Management Plan (SWMP)

The March Surface Water Management Plan (SWMP, Ref. 22) was completed in November 2012 and aims to produce a long term surface water management Action Plan for March that is more detailed than the county-wide scale Cambridgeshire SWMP. Three specific wet spots in March were identified:

- Wet spot 1 – North-West March including Maple Grove and Wisbech Road
- Wet spot 2 – South-West March particularly around Ellingham Avenue, Gaul Road and the recreation ground
- Wet spot 3 – South-East of March, focusing on Green Street and Morton Avenue

Having identified these wet spots through detailed modelling, a series of preferred options for further investigation, focussing on structural and non-structural solutions, were proposed to alleviate the surface water flood risk for extreme events in March.

Anglian Water is currently leading an integrated flood modelling project with the aim of better understanding flood risk within March.

Fenland Local Plan

The 2014 adopted Local Plan (Ref. 29) included the following objectives relating to climate change and flood risk, and it is anticipated that similar objectives will be included in the new Local Plan:

- 4.1 Increase use of renewable energy sources whilst minimising waste and the use of other energy resources
- 4.2 Limit or reduce vulnerability to the effects of climate change
- 4.3 Minimise vulnerability of people, places and property to the risk of flooding from all sources

Fenland District Council is currently preparing a new Local Plan to replace the 2014 adopted Local Plan, and initial consultations have been undertaken. The Issues and Options consultation document for the emerging Local Plan (Ref. 56) recognises that flood risk is an important issue for the district, and that the Local Plan will need to take account of this risk.

A Sustainability Appraisal Scoping Report has also been prepared for the emerging Fenland Local Plan (Ref. 56, October 2019), which assesses the baseline social, environmental and economic situation in the Plan area, aiming to identify which issues need to be addressed by the subsequent Sustainability Appraisal of the Local Plan. The Scoping Report sets out nine themes that have been identified as the main issues that the new Local Plan will seek to address and which, once adopted, will be key to helping deliver the priorities of the Council's Business Plan.

Resilience to Climate Change and Flood Risk is one of the themes of the emerging Local Plan, and the following sustainability objectives have been identified in relation to this theme:

- 5.1 Limit or reduce vulnerability to the effects of climate change.
- 5.2 Minimise and wherever possible remove the vulnerability of people, places and property to the risk of flooding from all sources.

The sustainability objectives identified in the Sustainability Appraisal will also form the objectives of the Local Plan. As the Local Plan is being progressed, each emerging Policy will be assessed against the sustainability objectives using the criteria set out in the Sustainability Appraisal Scoping Report.

3.1.5 Roles and Responsibilities

The FWMA and the Flood Risk Regulations assign differentiated responsibilities for Risk Management Authorities (RMAs) and Lead Local Flood Authorities (LLFAs). A description of roles and their assigned responsibilities for the Council area is included below.

Environment Agency

The Environment Agency is an RMA and has a strategic overview role that applies to all sources of flooding. This includes river (main rivers and ordinary watercourses), sea water, surface run-off and groundwater, as well as coastal erosion and flood risk from reservoirs. Under this role, the duties and powers of the Environment Agency include:

- Ensure long-term approaches to Flood and Coastal Erosion Risk Management (FCERM). This includes reviewing assessments, maps and plans for local flood risk management - normally undertaken by LLFAs;
- Provide evidence and advice to support others;
- Procure flood warning for flood risk from main rivers or the sea. In some parts of England flood warnings may also consider other sources of flood risk (e.g. reservoir, surface water);
- Monitor and report on flood and coastal erosion risk management, in a manner that is consistent with national and local strategies; and
- Be consulted on local strategies by the LLFA.

Cambridgeshire County Council

Cambridgeshire County Council is the LLFA. As an LLFA, Cambridgeshire County Council is required to:

- Prepare and maintain a strategy for local flood risk management in their areas, coordinating views and activity with other local bodies and communities through public consultation and scrutiny, and delivery planning;
- Maintain a register of assets – these are physical features that have a significant effect on flooding in their area;
- Investigate significant local flooding incidents and publish the results of such investigations, where considered appropriate;
- Establish approval bodies for design, building and operation of Sustainable Drainage Systems (SuDS) (Ref. 46);
- Issue consents for altering, removing or replacing certain structures or features on ordinary watercourses;
- Play a lead role in emergency planning and recovery after a flood event; and
- Run public consultations and engage local communities to actively participate in local flood risk management.

Fenland District Council

The Council, the LLFA and the Environment Agency will need to work closely together and ensure that the plans they are making link up both locally and nationally. Fenland District Council is the local planning authority whose duty it is to undertake specific planning functioning for an area. An essential aspect within the role of managing strategic spatial planning for the area and determining planning applications is managing local flood risk while taking into account relevant plans or strategies. The Council are also responsible for maintaining two awarded watercourses within its area – Commons Drove (Whittlesey) and Birch Fen (Chatteris).

Anglian Water

Anglian Water is the water and water recycling provider for over 6 million customers in the east of England, with an operational area spanning between the Humber and Thames estuaries. Anglian Water is the statutory water supply and sewerage undertaker for the whole of the Fenland District Council area. As a

regulated utility, Anglian Water implement a five-year cycle of infrastructure planning to ensure that customers and communities - current and future – have the required level of water supply and wastewater infrastructure.

Anglian Water plans to continue to work with FDC in the preparation of the emerging Local Plan to address issues identified in the 2019 Issues and Options consultation including the need to secure 'integrated water management to achieve multiple benefits' from development. In line with the requirements in the NPPF, Anglian Water want to ensure that the Local Plan supports the delivery of investment at their facilities including renewable energy projects.

Anglian Water recognises that water supply and wastewater management provide opportunities to protect existing environmental assets along with social and community benefits such as access to green and blue infrastructure which in turn makes Fenland an attractive place to live, work and invest in. Anglian Water's assets enable the company to perform their statutory duties including ensuring that customers water supply and sewerage services are maintained, resilient and future proofed.

Water companies play a major role in managing the risk of flooding to water supply and sewerage facilities and the risk to others from the failure of their infrastructure. As a RMA, Anglian Water must be consulted by the Council on strategies in the Fenland area which may affect them. Anglian Water's responsibilities in terms of flood risk include:

- Make sure their systems have the appropriate level of resilience to flooding, and maintain essential services during emergencies;
- Maintain and manage their water supply and sewerage systems to manage the impact and reduce the risk of flooding and pollution to the environment;
- Provide advice to the Council on how water and sewerage company assets impact on local flood risk;
- Work with developers, landowners and the Council to understand and manage risks – for example, by working to manage the amount of rainfall that enters sewerage systems; and
- Work with the Environment Agency, the Council and district councils to coordinate the management of water supply and sewerage systems with other flood risk management work.
- Have regard to FCERM plans in their own plans and work.

Internal Drainage Boards (IDBs)

IDBs are independent public bodies responsible for managing water levels in low-lying areas. They are the land drainage authority within their districts and their functions include supervising land drainage and flood defence works on ordinary watercourses. They represent land occupiers, the public and other interest groups and normally include representation from local councils. North Level District IDB, King's Lynn IDB and the Middle Level Commissioners have been consulted during the preparation of this study as they have responsibilities within the Fenland area. Whittlesey & District IDB have also been represented by the Middle Level Commissioners for this study. IDBs are recognised as RMA and must be consulted on local strategies by the Council, if affected by the strategy.

Highways Authority (Cambridgeshire District Council)

Highways authorities (the Highways Agency and unitary/county councils) have the lead responsibility for providing and managing effective highway drainage under the Highways Act 1980 (Ref. 2). They are recognised as RMA and must be consulted on local strategies, if affected by the strategy, by the Council.

Riparian Owners

The owners of land adjoining, above or with a watercourse running through it, have certain rights and responsibilities regarding how they can use their land as outlined in the Land Drainage Act 1991 (Ref. 3) – not being allowed to obstruct, pollute or divert in any way the water flow and being responsible for maintaining the bed and banks of the watercourse, the trees and shrubs growing on the banks, and keeping any structures, such as culverts, trash screens, weirs or mill gates, clear of debris.

Developers

Developers have a vital role in ensuring effective local flood risk management by avoiding development in areas at risk of flooding and/or providing appropriate flood risk reduction measures. Local strategies on flood risk should form a key element of local planning guidance. New developments must be designed in accordance with local and national planning policies and regulations.

3.2 Existing flood risk in the Fenland area

This section describes all types of flood risk to which the Fenland District Council area is susceptible, the related areas and level of risk in Fenland and where to obtain more information.

The Council is predominantly concerned with flooding caused when the received rainfall, river flows or tidal impacts exceed the design capacity of the drainage and flood risk management systems.

3.2.1 Historic Flooding

Historical flood information from all sources of flooding has been collated from the previous SFRA and additional up to date information received from the Environment Agency, the Council, IDBs and Anglian Water. **Map J – Historic flooding records⁶** shows historic flood outlines produced from EA data, flood incident reports received by the Council in the period 2011 – 2020 and the number of sewer flood incidents per post code area as reported by Anglian Water.

A summary of historic recorded flood events is presented in **Table 3-5** below. This table has been updated based on the 2011 SFRA (Section 3.3. Ref. 18), with any information relating to events prior to 2011 taken from the original table. More detailed information on these events can be found in **Appendix C**.

Table 3-5: Recorded flood events⁷

(Source – Environment Agency, Cambridgeshire County Council)

Date	Location	Details
1912	Ramsey	
1937	Widespread across the Great Ouse catchment	Widespread flooding, mostly farmland (excess of 2300 acres)
1947	Nene from Northampton to Peterborough	Heavy rain and snowmelt caused flooding of the Nene, which was exacerbated by failure of an embankment on the River Welland
1947	Great Ouse, River Cam, Bedford Ouse, Wissey, Cottenham Lode	Lowlands of Great Ouse, Welland and Nene
1950	River Nene	Seven flood peaks with sustained high discharge
1950	River Ouse	Catchment wide surface water flooding
1960	River Nene	Localised flooding caused by fluvial and high tide

⁶ Map F includes areas of land that have previously been subject to flooding, showing the maximum extent of individual Recorded Flood Outlines from river, the sea and groundwater flooding. Flooding from surface water is excluded. If an area is not covered by the Historic Flood Map this does not mean that the area has never flooded, only that the EA do not currently have records of flooding in this area that meet the criteria for inclusion.

⁷ Flood extents relating to these flood events may not be shown on Map F if the records of flooding do not meet the EA criteria for inclusion on the Historic Flood Map.

Date	Location	Details
1974	River Nene	Shallow inundation of the floodplain. No major flooding reported
1978	Surface water flooding in Wisbech and Sutton Bridge	Discharge of surface water impeded by high tides
1978	River Nene	Breach in the Wash primary sea defence at Ingleborough on the right bank, approximately 5km downstream of Wisbech. The tide reached near to the 1 in 200 year level and was accompanied by strong winds and wave action. Defences were overtopped at Wisbech and 1 life was lost.
1981-82 Winter	River Nene	Agricultural land flooded, but few roads and no properties were flooded
1983	River Nene	Navigation on River Nene closed. Flood storage areas put to effective use to keep flows within bank other than at isolated low spots
1998	Middle Level catchment	Approximately 2800 properties affected, nearly 90% residential and about 90% in Northampton. Commissioners system experienced high water levels, all pumping stations discharging into system were turned off for 24hrs to protect raised defences all alleviate flooding by allowing peak flows to pass.
1998	River Great Ouse and tributaries incl. Alconbury Brook and the River Kym	600 buildings, 9000 ha farmland affected, disruption caused to gas and electricity supplies.
November 2013	Benwick	50 acres of land flooded, likely caused by leakage through the Nene banks.
August 2014	District-wide, particularly March	Heavy rainfall resulted in many flooded properties and caused road closures, with overwhelmed drains exacerbating surface water flooding. Supermarket, local cricket club and car parks affected. Water poured over edge of river at Nene Parade. 18 inches of flooding inside properties.
January 2016	March	Surface water flooding caused by a blocked road drain causing water to back up and cover the pavement. Residents can't enter their own properties.
July 2017	Wisbech	Flooding caused by surface and fluvial water not draining into the SW system. Flooding has been internal on a number of properties and people were temporarily removed during repairs. External flooding was also prevalent with standing water being present for a prolonged period.
December 2020	District-wide	High water table from groundwater flooding and overflowing watercourses (ditch dykes and streams) from surface water, which included blocked structures such as culverts, all following a very heavy rainfall event. Severe surface water flooding also resulted in overflowing foul water. Many properties were flooded and flood waters reached 3 ft in some places.

3.2.2 What is Risk?

'Risk' is the likelihood of a hazard occurring multiplied by the impact of the hazard when it occurs (i.e. Risk = Likelihood x Impact). This definition is in accordance with the NPPF approach (Ref. 74), which refers to Flood Zones (likelihood or chance of flooding) and vulnerability classification (potential impact to the development).

Most of the flood risk information provided by this SFRA relates to flood likelihood. Where this flood risk information is used to support the allocation of new development, the impact aspects of risk are added. This likelihood of flooding is stated in terms of annual probability and is described as the chance that a location will flood in any one year. Most commonly assessed probabilities are shown in **Table 3-6**.

Table 3-6: Common flood risk probabilities
(Source – Water UK, Environment Agency)

Annual probability (%)	Annual probability as a fraction	Example
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3.3%	1 / 30	Surface water sewers built under the 'Sewers for Adoption' (Ref. 49) requirement are typically designed for this probability of flood event.
1%	1 / 100	The largest flood event for which flood defences to Main Rivers are typically designed.
0.5%	1 / 200	The largest tidal flood event for which flood defences are typically designed to protect against, including the defences on the tidal River Nene.
0.1%	1 / 1000	The largest flood event that the banks of the Nene Washes are designed to contain. This represents the Standard of Protection against overtopping of the Nene Washes and not a catastrophic breach failure (Ref. 40).

3.2.3 Description of River Catchments

Fenland falls within two main river catchments, the River Nene and the River Great Ouse. **Figure 1-1** shows all Main Rivers passing through the district.

The catchment of the River Nene is located in the east of England. The River Nene and its tributaries: the Kislingbury Branch, the Brampton Branch and Wootton Brook, rise in the Northampton uplands to the west of the catchment and the River Nene's catchment extends from around Daventry eastwards through Northampton, Wellingborough, Peterborough, Wisbech and Sutton Bridge before discharging into The Wash. The overall catchment area is about 2,270 km² and has a population of around 750,000.

The River Nene enters the western boundary of Fenland just to the north of Whittlesey and flows east towards Guyhirn and then north easterly towards Wisbech, flowing past the west of the town in a northerly direction. The Dog in a Doublet Sluice at Whittlesey represents the upstream boundary of the tidal influence on the River Nene. Within Fenland all of the River Nene is subject to tidal influence.

The source of the Great Ouse is in Northamptonshire near Brackley. The river passes through several towns before it crosses the Fens and flows into The Wash downstream of King's Lynn. The overall catchment area is about 8,596km² and has a population of around 1.7 million people. Although there are large centres of population (Milton Keynes, Bedford, Huntingdon), the catchment is largely rural.

Part of the Great Ouse forms the boundary between Fenland District and East Cambridgeshire, to the south-east of Fenland. The old course of the Great Ouse (known locally as the Ely Ouse) is located to the south east of the study boundary, within East Cambridgeshire. However, as part of the historic drainage of the Fens, two drainage channels were cut and one of these (the Old Bedford River) now forms most of the south eastern boundary of Fenland.

The Old Bedford River was created in the 1630s and runs from Earith to Denver, separated from the tidal Ouse by the Old Bedford Sluice at Earith, located to the south of the study boundary. The second drainage channel was the New Bedford River (also known as the Hundred Foot Drain), which was also created from Earith to Denver, approximately 600m to the east of the Old Bedford River. When necessary, flow is directed by the Environment Agency through the two Bedford Rivers to Denver Sluice. The New Bedford River (Hundred Foot Drain) is tidal, whereas the Old Bedford River remains fluvial to Denver Sluice.

Fenland also contains a number of ordinary watercourses and an extensive network of drains which are used by the Internal Drainage Boards to manage water levels within the area.

3.2.4 Fluvial Flooding

Fenland is susceptible to fluvial flooding (Ref. 18). The process of flooding from watercourses depends on a number of characteristics associated with the catchment including geographical location and variation in rainfall; steepness of the river channel and surrounding floodplain; and infiltration and rate of runoff associated with urban and rural catchments.

Historic Fluvial Flooding

There are historical records of the River Nene and the Great Ouse causing fluvial flooding within Fenland. More information can be found in **Appendix C**.

Flood Map for Planning (Rivers and Sea)

The Environment Agency's Flood Map (**Map K**) indicates the area at risk of flooding, assuming no flood defences exist, for a flood with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring for fluvial (river) flooding. It also shows the extent of the Extreme Flood Outline, which represents the extent of a flood with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater. The Flood Map also shows the location of formal raised flood defences and flood storage reservoirs. It represents areas at risk of flooding for present day only and does not take account of climate change.

The Flood Map only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered flooding may occur from other sources such as surface water sewers, road drainage, etc.

Functional Floodplain

NPPG (Ref. 74) defines the functional floodplain as Flood Zone 3b⁸ and it is described as *land where water has to flow or be stored in times of flood*. These areas are usually defined by higher annual probabilities of flooding (e.g. 5% AEP (1 in 20-year)), they include all flood storage reservoirs, but exclude currently developed land or areas that benefit from flood defences.

The Nene Washes flood storage reservoir is the only Flood Zone 3b area located within Fenland, and is shown on **Maps J and K**.

Residual Flood Risk

Flood defence embankments and pumping stations reduce the risk of fluvial flooding to the area. The flood defences to the River Nene through Fenland (discussed in Section 3.3.2) are primarily designed to protect against tidal flooding. As such they provide a standard of protection against fluvial flooding which is greater than 1% EAP (1-100 years).

Specific details of the standard of protection provided by the River Nene Flood defences against fluvial flood risk were not available from the information obtained to develop this SFRA. The Environment Agency's Hazard Mapping (Ref. 16) for Wisbech considered only a nominal fluvial flow, because tidal flood risk is the dominant flooding mechanism in this area and therefore the focus of the hazard mapping. A larger fluvial event could combine with a tidal event resulting in higher water levels, though overall, this would represent a more extreme occurrence than the scenarios tested in the modelling undertaken for the hazard mapping. Additional joint probability analysis and modelling would be needed to better understand the potential combinations of conditions that could cause flooding in Wisbech. It is recommended that this issue is considered further as part of a Level 2 SFRA, although additional joint probability analysis and modelling is not currently recommended.

The Old Bedford River, which forms the south-eastern boundary to Fenland District, is fluvial up to Denver Sluice. Flood risk from the Old Bedford River is managed by allowing the Ouse Washes to flood when

⁸ Refer to Appendix B for definition of Flood Zones.

there is a high fluvial flow. **Map K** shows an 'Area Benefitting from Defences' immediately to the north of the Old Bedford River, which reflects the area protected by this management system. There is a residual risk of fluvial flooding to this area due to the potential for failure of Earith sluice, or if a fluvial flood event occurs which exceeds the design standard of the sluice.

3.2.5 Tidal Flooding

Fenland is not directly on the coast and is, therefore, not at risk from coastal flooding. However, for most of the district the River Nene, the Great Ouse and some of the drains are influenced by the tide, and for most parts of Fenland, the dominant source of flood risk is tidal rather than fluvial or pluvial.

Historic Tidal Flooding

The historic flooding records (**Section 3.2.1** and **Map J**) cover tidal flood risk as well as fluvial flood risk.

The January 1978 North Sea storm surge caused water to overtop the banks of the River Nene as channel capacity was exceeded, flooding a large proportion of Sutton Bridge and Wisbech at a time when raised flood defences did not exist. The outline extent of this event is shown in **Map K: Historic flooding records**.

Notable tidal flooding events in Fenland occurred during the storm surges of 1953 and more recently in 2013 where water levels reached the highest on record, exceeding the 0.2% AEP flood level (Ref. 38). This event came very close to overtopping the new flood defences in Wisbech (Ref. 51) and caused significant flooding around the Nene and Ouse Washes, as well as extensive flooding along the North Norfolk coast. Other significant tidal surge events were experienced in Wisbech and along the River Nene in November 2007 and January 2017.

Flood Map for Planning (Rivers and Sea)

As the flood mechanism for the rivers within Fenland is tidally influenced, the Environment Agency's Flood Map for Planning (referred to in Section 3.2.4) and included as **Map K** covers tidal flood risk as well as fluvial flood risk.

Residual tidal flood risk – River Nene

Flood defence embankments and pumping stations reduce the risk of tidal flooding to the area. For example, the existing Environment Agency flood defences on the tidal River Nene through Wisbech provide a standard of protection against the 0.5% AEP tidal flood event (Ref. 20) and were upgraded in 2007/08. These defences may be overtopped or breached during flood events which are more severe than the 0.5% AEP tidal flood event.

The Environment Agency has undertaken studies to identify the areas of residual risk in Fenland in the event of a breach or overtopping of the tidal flood defences on the River Nene (Ref. 16, Ref. 43). **Map R** shows the flood hazard to people due to a breach of the River Nene tidal defences, and **Map S** shows the flood hazard due to overtopping of the River Nene tidal defences. These maps show that there is a residual risk of flooding from a breach of the tidal defences downstream of Ring's End sluice, potentially affecting locations within 4km of the River Nene. The residual risk of flooding from overtopping is limited to a small area to the south west of Wisbech on the north side of the river, and a larger area to the north of the town on both sides of the channel. Additional assessment of this hazard mapping is recommended as part of the proposed Level 2 SFRA.

A Level 2 SFRA was previously prepared for Wisbech (Ref. 20) following on from the previous Level 1 SFRA (Ref. 18) and informed by the Hazard Mapping completed by the Environment Agency (Ref. 16). The Level 2 SFRA is supported by a Site Specific Flood Risk Assessment Toolkit (Ref. 20) which provides guidance

on the requirements for FRAs for proposed development sites in Wisbech. It is recommended that these documents are reviewed and updated as necessary to support the emerging Local Plan.

Wisbech is well protected against tidal and fluvial flood risk by raised defences and IDB pumping stations. However, there is a significant residual risk of flooding due to overtopping or breach of the defences. The Wisbech Level 2 SFRA (2012) indicates that overtopping of the current flood defences in Wisbech would not be expected to occur during a present day 0.5% (1 in 200) plus climate change AEP tidal flood event. Only very minor overtopping would be expected to occur during a present day 0.1% (1 in 1000) AEP event outside of the Wisbech town centre.

The Wisbech Level 2 SFRA also considers future residual flood risks, taking climate change into account to assess the risk of overtopping and breach in 2115. The climate change predictions assumed a 1.1m increase in sea level from 2011 to 2115, based on the 2012 version of the Technical Guidance to the NPPF⁹. It was assumed that the crest levels of the defences were unchanged. With climate change, significant overtopping occurs on both the 0.5% and 0.1% AEP events, causing flooding in the following locations:

- Upstream of Sutton Bridge on both the left and right banks (outside of Fenland District);
- Between Bevis Lane and Lords Lane on the left bank, upstream of Wisbech; and
- North eastern and south western Wisbech, where large areas are classified as ‘dangerous for most’ in the 0.1% AEP climate change event.

For both the present day, and with climate change to 2115, the modelling undertaken for the Level 2 SFRA indicates significant flood risk to Wisbech should the Tidal River Nene flood defences be breached.

Residual tidal flood risk – Great Ouse

Residual tidal flood risk from the Great Ouse is managed through the operation of Denver sluice, which diverts high tidal flow events into the Ouse Washes. Denver sluice is located about 9.5km downstream (north east) of the Fenland District Council boundary. The residual risk of tidal flooding from the Old Bedford River relates to the potential for failure of Denver sluice, or if a tidal flood event occurs which exceeds the design standard of the sluice.

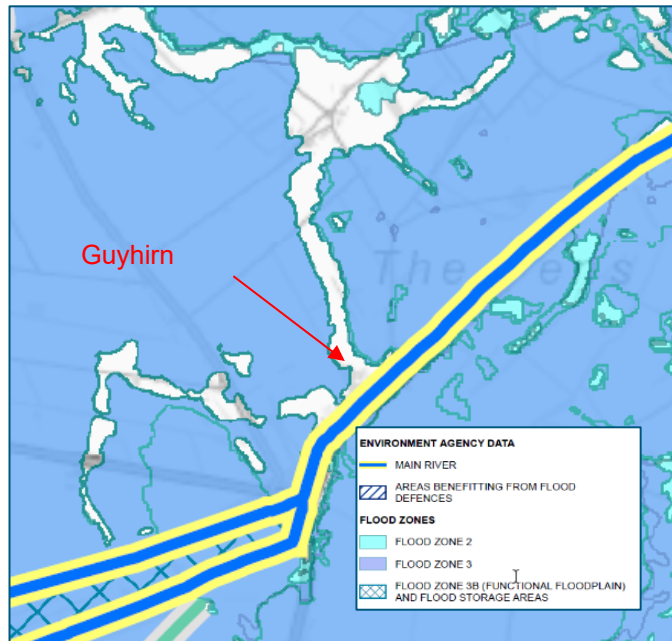
The Environment Agency has undertaken modelling to produce hazard mapping which identifies the areas of residual risk in the event of a breach or overtopping of the tidal flood defences to the Great Ouse. This mapping relates to the tidal reach of the Great Ouse downstream of the Denver Complex, which is outside of Fenland District and as such is not included in this report. Additional assessment of this hazard mapping is recommended as part of the proposed Level 2 SFRA.

⁹ This is now superseded by the Environment Agency’s sea level rise allowances for the Anglian RBD, as set out in Table 3-4. Climate change-induced sea level rise is now predicted to increase the MHWS level on the River Nene from 3.8m AOD present day to 5.10m AOD in 2115 (Ref. 80).

Tidal Flood risk to Guyhirn

The Flood Map for Planning shows much of the village of Guyhirn to be in Flood Zone 1, whilst adjacent areas are in Flood Zone 3 due to risk of tidal flooding, as shown in **Figure 3-2** (extract from **Map K**). Properties in Guyhirn are located below the crest level of the flood embankment to the adjacent River Nene. Therefore, it is reasonable to assume that this area is also within Flood Zone 3. The Environment Agency has confirmed that until they have completed further work to assess and confirm the flood zones in and around Guyhirn, this area should be considered to fall within Flood Zone 3 in the context of the Sequential and Exception tests for proposed development.

Figure 3-2: Flood risk at Guyhirn
(Source - Environment Agency)



3.2.6 Surface Water Flooding

Fenland is susceptible to flooding from surface water runoff (Ref. 18). It is quite common for parts of Fenland to experience small scale flooding of highways, footpaths and private gardens due to surface water runoff.

Surface water flooding is caused generally by very intense rainfall causing water to pond or flow over the ground surface before entering surface water sewers and other local drainage networks (e.g. ordinary watercourses or other drainage features such as lakes), or when water cannot enter the network due to insufficient capacity. This is particularly important within the drained areas of the district.

Fenland is artificially drained due to historic land reclamation. The district is close to or below sea level, so in order to prevent large areas from flooding due to an accumulation of rainwater, surface water has to be actively managed via ditches and the IDB networks. Localised areas of high ground (due to the underlying geology), as well as roads and other infrastructure that has been developed on top of embankments, are drained via the wider drainage network so do not suffer the same level of flood risk. If drainage from these areas is not correctly managed, this could worsen flood risk elsewhere.

There is a finite surface water capacity within the district, which is limited by the sizing of urban and rural drainage systems and the pump capacities of the drainage systems. Uncontrolled development has the potential to increase both the rate and volume of runoff and has the potential to alter the pathways that surface water takes in entering the drainage system if not controlled. Therefore, the location of development and control of runoff from it is an important factor in spatial planning to ensure that flood risk is not increased in the Middle Level, North Level and King's Lynn drainage systems.

Updated Flood Map for Surface Water

The updated Flood Map for Surface Water (Ref. 67) shows the risk of surface water flooding using the classifications 'High' (1 in 30 year return period (3.33% AEP) or more frequent), 'Medium' (1 in 30 to 1 in 100 year return period (1% to 3.33% AEP)) and 'Low' (1 in 100 to 1 in 1000 year return period (0.1% to 1% AEP)).

It should be noted that this map does not provide an indicator of flood risk at an individual property or site level. The information provided relates to an area rather than a specific property, so not all properties within that area (e.g. a street or a postcode) will necessarily be at the same risk of flooding, for example if the

property is on higher land or the floor levels are high. The map does not take into account the threshold heights of individual properties. Other sources of flood risk such as blocked drains or burst pipes are not included.

The updated Flood Map for Surface Water has been considered in the detailed assessment of the preferred sites in **Table 3-8** and in **Section 4** of this report, and is included in **Map L - Risk of flooding from surface water**.

Critical Drainage Areas

A Critical Drainage Area (CDA) is recognised as an area that has special drainage requirements due to a number of factors. These can include:

- existing flood records;
- capacity issues which, with extra flows, would create increased surface water flood risk;
- sensitive receiving environments; and
- the potential for development to significantly change drainage patterns

The risk of flooding within a CDA is confirmed by historical evidence, numerical modelling or by another detailed form of analysis. Based on information obtained from the Environment Agency, there are no specific Critical Drainage Areas currently identified for Fenland, although this could change in the future.

3.2.7 Sewer Flooding

In addition to surface water drains and sewers, Fenland has foul sewers and combined sewers. Combined sewers are generally associated with having the greatest risk of flooding within the wastewater network; during intense rainfall events large quantities of rainwater can take up the capacity in the sewers. There are no locations in Fenland that are classified as being at risk from foul flooding due to a lack of capacity in the network. Within Fenland, resolving capacity issues and associated foul flooding is a key priority for Anglian Water.

Historic Sewer Flooding

Consultation with Anglian Water, the Council and the Environment Agency was carried out regarding previous sewer flooding and any areas deemed to be at potential risk. Anglian Water reports the properties that are affected by sewer flooding to the Water Services Regulation Authority (Ofwat), on the sewer flooding register. Anglian Water continuously investigates the entries on this register to identify the cause of flooding and to decide if an engineering solution is required. Delivery of any engineering solution will be determined by the severity and frequency of the flooding and also by the cost/ benefit of the solution.

The locations of previously flooded properties are covered by the Data Protection Act. Anglian Water has agreed to supply information using postcode areas for locations where these incidents have occurred. **Appendix C** includes a list of areas that have been subject to localised sewer flooding (both surface and foul) according to this data. **Table 3-8** includes the risk of sewer flooding for the potential development sites, which shows that locations with a risk of sewer flooding are typically also at risk from groundwater flooding.

3.2.8 Groundwater Flooding

The Environment Agency Catchment Flood Management Plans (CFMP) present the status of flooding and can often provide locations that have experienced past flooding. Neither the River Nene or Great Ouse CFMP indicate groundwater flooding problems within the Fenland DC area.

According to the advice received from the Environment Agency and the information gleaned from the geological and Open Source maps, the following observations can be made. In general, to identify potential Groundwater flooding risk areas consideration should be given to the following:

- Solid and drift Geology (Ref. 71);
- Geological features such as faulting, geological boundaries both solid and drift;
- Current River and drainage networks;
- Topography, i.e. ground level and overland flood routes.
- Minor tributaries and dried river valleys - these can be identified on the solid drift maps as river terrace deposits, alluvium, extending from existing river system, good indication of historical river network;
- Hydrogeological features such as swallow holes;
- Population centres close to or built on the features identified in this section;
- Groundwater flow; and
- Groundwater levels.

Solid geology is exposed at the western portion of the study area where geological boundaries exist between the Northampton sands, Lincolnshire limestone and Blisworth Limestone. There is also significant faulting in this area resulting in a non-uniform groundwater flow. There are a number of springs shown on the Open Source base maps, and the British Geological Society (BGS) geological maps indicate historical tributaries and river networks. The Geology of the Fenland District is shown in **Figure 3-3**.

Potential new development areas that coincide with the features identified in this section of the report will need further review through site-specific FRAs. **Table 3-8** includes the risk of groundwater flooding for the potential development sites, which shows that sites at risk from groundwater flooding are typically also at risk from sewer flooding.

3.2.9 Reservoir Flooding

The Ouse and Nene Washes are important flood storage areas which are officially designated as reservoirs. The Nene Washes are fully located within Fenland whilst the Ouse Washes are located to the south east of Fenland along the district boundary with East Cambridgeshire.

Reservoirs in England and Wales are regulated by The Reservoir's Act (Ref. 1), which offers a high level of protection against reservoir flooding (over 25,000m³ of water able to escape onto lower ground) (Ref. 18, 67). The Reservoirs Act prescribes tight regulations on periodic inspections, maintenance and water level monitoring. However, if a reservoir should breach, the consequence is often very significant, as there is often little warning of reservoir failure. As a result, the residual risk of reservoir flooding should be considered in a proportionate way using information from the Environment Agency's map of Flood Risk from Reservoirs. The scenarios considered to assess the risk of a breach of different types of reservoirs in order to develop these maps is set out in the Environment Agency publication Reservoir Flood Maps (RFM) Guide (Ref. 45).

The Reservoir Flood Maps¹⁰ are included in **Map M - Risk of flooding from reservoirs**. This shows that large areas of Fenland District to the north and south of the Nene Washes, and to the north west of the Ouse Washes, are at risk from reservoir flooding. However, due to the provisions of The Reservoirs Act, there remains a very low likelihood that reservoir flooding will occur. Both the Ouse and Nene Washes have had significant investment in the maintenance and improvement of their barrier banks in the past 10 years. There are no historical records of flooding from this source for Fenland.

¹⁰ It is noted that the Reservoir Flood Maps are currently being updated by the Environment Agency, with new modelling methods applied and different scenarios tested. The current Reservoir Flood Maps shown be reviewed by developers as part of the preparation of any site specific FRA.

The Reservoir Flood Maps will be considered in the detailed assessment of the preferred sites (**Section 4** of this report).

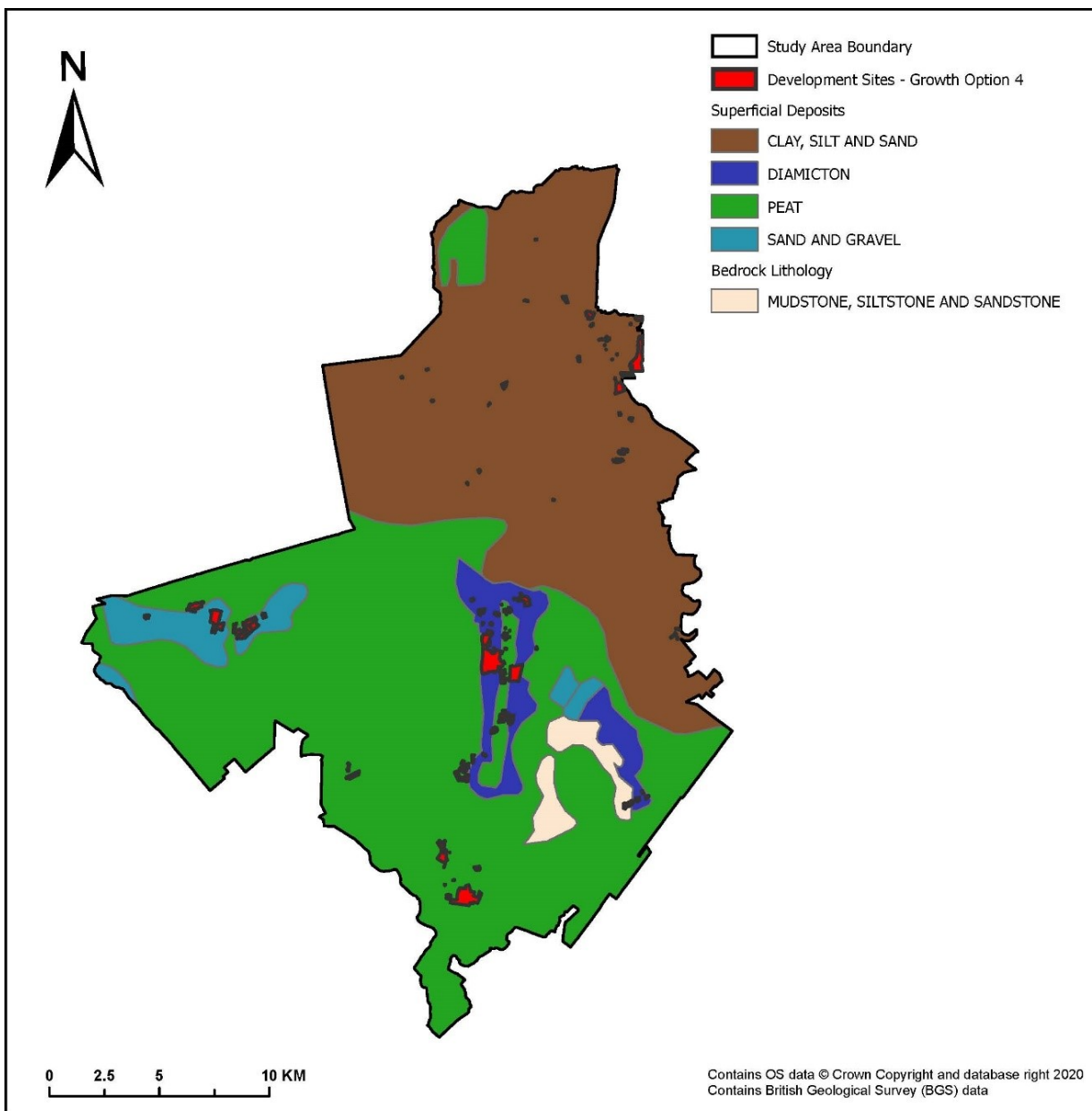


Figure 3-3: Superficial and Bedrock Geology of Fenland
(Source – Fenland District Council, British Geological Survey)

3.3 Flood risk management measures

3.3.1 Types of measures and responsibility

Flood risk in Fenland is managed through the use of flood defences, flood warning areas, warning dissemination and emergency and evacuation plans. A variety of national and local bodies and stakeholders share responsibility for flood risk management, according to the FWMA.

The Environment Agency holds a strategic level role and manages flood defences located along main rivers, defines flood warning areas and develops effective warning dissemination tools. However, at a local level the Lead Local Flood Authority (LLFA), take a lead role in coordinating flood risk management and approving the adequacy of flood emergency response procedures accompanying development proposals. They undertake consultation with their emergency planners and the emergency services to determine whether the proposals are safe in accordance with paragraph 163 of the NPPF and the guiding principles of the PPG. In addition, LLFA's focus predominantly on surface water runoff, ordinary watercourses and groundwater, working with other risk management authorities, stakeholders and the public. Risk Management Authorities can propose projects for inclusion in the 2015/16 - 2020/21 6 Year Programme, a capital investment programme that seeks to reduce flood risk. This programme is funded from a variety of sources including Government Grant in Aid, Local Levy funding and contributions from third parties.

A brief description of the existing flood risk management measures managed by various organisations is given below.

3.3.2 Flood risk management assets

Fenland District is very dependent upon water management assets for the safe disposal of surface water and the conveyance and attenuation of flood water, which are primarily managed by the Environment Agency and the IDBs, with a few combined sewers the responsibility of Fenland District Council.

Structures managed by the Environment Agency

The Environment Agency has the responsibility for looking after the formal main river and coastal flood defences and has permissive powers to carry out works of maintenance, improvement and flood defence on main rivers. In addition to inspection and routine maintenance of flood defences and other structures, the Environment Agency carries out routine maintenance, such as bank clearance or in-channel work to remove weed growth and silt, and non-routine maintenance (e.g. removal of blockages) to maintain flow conveyance of the designated main rivers.

Maintenance work is carried out on a risk-based approach, with High Flood Risk systems prioritised for maintenance. Asset Management teams deliver maintenance across all High, Medium and Low risk systems, where budget allows.

River Nene Catchment

To the north of Whittlesey, approximately 8km downstream of Peterborough, is the Dog-in-a-Doublet sluice, where the fluvial River Nene meets the tidal reaches of the River Nene. The tidal River Nene flows northeast from here for about 40km until its outfall in The Wash.

The flood defences along the entire length of the tidal River Nene consist of raised earth embankments, with the exception of the reach through Wisbech where the defences consist of raised concrete walls on both the north and south banks.

Old Bedford River (Great Ouse Catchment)

A raised earth embankment forms the northern bank of the Ouse Washes, along the south-eastern boundary of Fenland District. The Old Bedford River is located on the north side of this embankment; it does not have a raised defence on its north bank.

Fluvial flood risk from the Old Bedford River is managed at Earith Sluice (approximately 11km south of Chatteris). At Earith, high fluvial flows can be diverted from the main channel of the Great Ouse into the

drainage channels (Old Bedford River, New Bedford River/Hundred Foot Drain – see **Figure 1-1**) and the Ouse Washes. Whilst Earith Sluice is outside the Fenland District Council boundary, it is important in terms of flood risk to Fenland District.

Welmore Sluice at the north end of the Ouse Washes (approx. 5.5km south west of Downham Market), allows the washes to drain on a low tide and prevents tidal inundation.

At Salters Lode, approximately 3km south west of Downham Market, the Denver Complex controls the flow from the non-tidal Ely-Ouse (Ten Mile River) into the tidal reach of the Great Ouse. The Denver Complex manages tidal flood risk preventing tidal flows from entering the Ely Ouse.

Structures managed by Internal Drainage Boards (IDBs)

North Level IDB

There are no raised defences within the North Level IDB area although drainage is heavily managed with a network of drains and pumping stations, as shown on **Map P**.

Middle Level Commissioners

The area covered by the Middle Level Commissioners is dependent on artificial pumped drainage to effectively drain excess rainwater from the area. The various drains, pumping stations, outfalls and locks are shown on **Map P**.

King's Lynn IDB

King's Lynn IDB is located to the north of the Fenland District Council area. The Board's drainage and water level management infrastructure consists of watercourses, pumping stations and various other water level control structures in their area (Ref. 68).

Structures managed by Fenland District Council

Fenland District Council owns and maintains a number of flood risk management assets which serve former council housing. These assets are typically foul or combined sewers rather than surface water flood risk management assets:

- 13 Sewage Treatment Works
- 2 Pumping Stations

The Council also maintains a small number of Sewage Treatment Works and Pumping Stations on behalf of Cambridgeshire County Council, which are located on traveller sites:

- 3 Sewage Treatment Works
- 3 Pumping Stations

The assets owned by the Council, and those maintained by the Council on behalf of CCC are shown in **Figure 3-4**.

The Council has two awarded watercourses for which it is responsible for as the flood risk authority, to ensure that free-flowing water is maintained:

- Commons Drove, Whittlesey
- Birch Fen, Chatteris

The Council do not own the land, nor do they accept additional discharge in the watercourses without approval from the relevant drainage board.

The future of flood risk management assets in Fenland

The water management infrastructure in place throughout Fenland District is expensive to maintain and replace and has a relatively high carbon cost. As a result, the type of water management infrastructure required for the district in the future may not be the same as at present. This will require further assessment and review in due course.

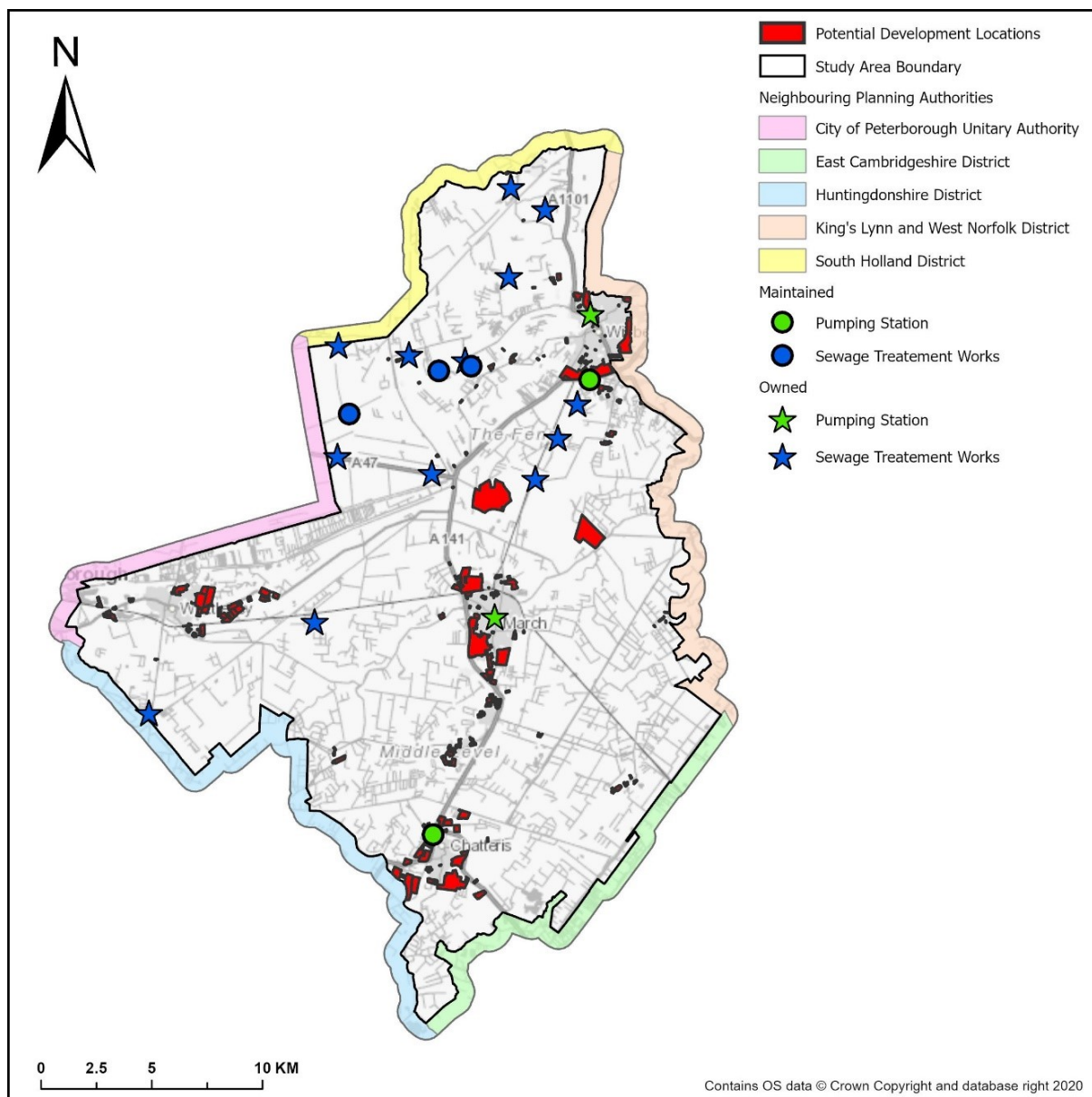


Figure 3-4: Fenland District Council owned and maintained assets
 (Source – Fenland District Council, Cambridgeshire County Council, Office for National Statistics)
 Note: assets denoted as 'Maintained' are owned by Cambridgeshire CC and maintained by Fenland DC

3.3.3 Residual Risk Management

Flood risk to people and property associated with new developments can be managed but it can never be completely removed; a residual risk will always remain after flood management or mitigation measures have been put in place. The sequential approach is a risk-based method for determining the preferred location for development, and as such it should consider residual risks.

Even when flood defences are in place there is always a possibility that these could be overtopped by a flood of a magnitude greater than that for which they have been designed to alleviate, or that they could fail or breach. Areas behind flood defences are at particular risk from rapid onset of fast-flowing and deep water flooding, with little or no warning if defences are overtopped or breached. As large parts of Fenland District are managed by pumped drainage, with arterial drainage channels often higher than surrounding ground levels, there is a significant residual risk if the defences overtop, or if there are failures within the pumping system.

Various modelling studies have been undertaken by the Environment Agency to identify the areas of residual risk in Fenland in the event of a breach or overtopping of main river flood defences. This includes tidal hazard mapping for the River Nene (Ref. 16) and for the Great Ouse (Ref. 36), fluvial flood hazard mapping (Environment Agency Fenland model) and hazard mapping for the Whittlesey Washes. These hazard maps show that the residual risk from overtopping or breach of flood defences is significant in parts of Fenland District.

Additional assessment of the Environment Agency's hazard mapping, as well as work undertaken by the IDBs to assess pump failure risk, is required to provide appropriate information about residual flood risk in Fenland District. It is recommended that this information be included in the proposed Level 2 SFRA.

Residual risk should be considered as part of site-specific Flood Risk Assessments. This should consider both the impact of breach, including the effect on safe access and egress, and the potential for flood risk to increase in the future due to overtopping. Rapid inundation zones should be identified, and the severity of the risk determined, considering the extent, depth and duration of flooding, speed of onset and velocity of flood water, hazard to people, risk to buildings and warning and evacuation procedures.

Flood Warning

Within Fenland District, as elsewhere in England, the responsibility for flood warning rests primarily within the Environment Agency. The Environment Agency provides flood warnings for designated Flood Warning Areas, which warn of the risk of flooding from rivers, the sea and groundwater. Flood warnings currently cover all main river reaches within Fenland. The flood warning system is continuously updated, so the latest information should be checked online at <https://flood-warning-information.service.gov.uk/warnings>.

Flood Warnings are disseminated by the Environment Agency via a free flood warning system known as Floodline Warnings Direct that provides warnings directly to customers 24 hours a day. Flood warnings are issued using a set of four easily recognisable codes which include:

- Flood Alert, where flooding of low-lying land and roads is possible;
- Flood Warning, where flooding of homes, businesses and main roads is expected;
- Severe Flood Warning, where severe flooding is expected. Danger to life and property; and
- Warning no longer in force, where flood alerts or warnings have been removed in the last 24 hours.

Flood warning messages detail the level of warning issued, the area for which the warning is in force and advice on what action to take. As flood events develop the public is encouraged to phone Floodline for updates. This system requires residents of "at risk property" to register their telephone numbers with the Environment Agency. Concerned parties are able to obtain current flood warning information according to a particular river or Flood Warning Risk Area.

The Environment Agency cannot provide flood warnings for surface water, road drains, sewer flooding and burst drains. The information on these will come from the Met Office rainfall warnings or other sources available to the IDBs, Highways Agency, the Council, Anglian Water and the public. Certain areas may be at additional risk due to their location downstream of heavily urbanised areas and urban areas that have the potential for "flash flooding", surcharging the capacity of existing sewers and watercourses.

Other current methods of warning dissemination to the public include the following, which are used to warn of flooding due to rainfall or risk of reservoir flooding:

- UK Met Office weather warnings: [Warnings and advice - Met Office](#)
- the media – warnings are issued through the media; they are broadcast on TV weather bulletins and on radio weather and travel reports;
- Floodline 0345 988 1188 – offers callers the option to listen to recorded flood warning information 24 hours a day and speak to a trained operator for more advice; and
- internet – The Environment Agency’s website www.environment-agency.gov.uk/flood contains a number of live warning services.

The risk of groundwater flooding is presented in the water situation reports published by the Environment Agency.

- [Groundwater: current status and flood risk - GOV.UK \(www.gov.uk\)](#)
- [Water situation: national monthly reports for England 2021 - GOV.UK \(www.gov.uk\)](#)

Emergency and Evacuation Plans

Under the Civil Contingency Act 2004, Fenland District Council and many of the other flood management organisations are also emergency responders. There are two categories of emergency responder:

- **Category 1:** the core responders. They include the ‘blue-light’ services (Police, Fire and Rescue, Ambulance Service), the NHS, local authorities and the Environment Agency.
- **Category 2:** co-operating responders that act in support of the category 1 responders. Includes utility companies such as Anglian Water and UK Power Networks, and transport organisations such as the Highway Agency.

In planning for flooding the following different roles exist under the Civil Contingencies Act 2004:

- Warning and informing people – all
- Putting joint response plans in place – all
- Response actions – blue light services
- Recovery – local authority i.e. Fenland Council

Fenland District is a member of the Cambridgeshire and Peterborough Local Resilience Forum, a co-ordinated, multi-agency emergency response group comprising:

- | | |
|--|---|
| • Anglian Water | • Cambridge Fire and Rescue Service |
| • East Cambridgeshire District Council | • Fenland District Council |
| • East of England Ambulance NHS Trust | • Huntingdonshire District Council |
| • Environment Agency | • Peterborough City Council |
| • Cambridge City Council | • South Cambridgeshire District Council |
| • Cambridgeshire Constabulary | • Public Health England |
| • Cambridgeshire County Council | • NHS England |

The Forum’s emergency flood planning is therefore a Multi-Agency Flood Plan and should ensure full coverage of the Nene, Welland and Great Ouse catchments.

According to the NPPF, and in order to demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, a site-specific flood risk assessment is likely to need to show that appropriate evacuation and flood response procedures are in place to manage the flood risk. Flood warning and evacuation plans should be in place in those areas known to be at risk of flooding and should make provision for:

1. How flood warning is to be provided:
 - a) availability of existing flood warning systems
 - b) rate of onset of flooding and available flood warning time
 - c) method of dissemination of flood warning
2. What will be done to protect the infrastructure of the development and contents, such as:
 - a) how more easily damaged items (including parked cars) will be relocated
 - b) the potential availability of staff/occupants/users to respond to a flood warning
 - c) the potential time taken to respond to a flood warning
3. Ensuring safe refuge and access to and from the development, such as:
 - a) occupant awareness of the potential frequency and duration of flood events
 - b) provision of safe access to and from the development
 - c) ability to maintain key services during an event
 - d) vulnerability of occupants, and whether rescue by emergency services will be necessary and feasible
 - e) expected time taken to re-establish normal practices following a flood event (clean-up times, time to re-establish services etc.)

Where evacuation plans are required, they need to consider the lifetime of the development by fully taking into account the prospective climate change impacts.

Guidance has been prepared by the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) and the Environment Agency (Ref. 55) for local planning authorities to inform decisions about whether development proposed in areas of flood risk will be safe in relation to emergency plans and access and escape routes. This guidance may also be useful for developers to inform their considerations of the implications of flood risk for emergency planning.

Flood resistance and resilience

One of the factors in determining whether development in flood risk areas is appropriate is whether the development is designed to be appropriately flood resilient and resistant, including safe access and escape routes where required (NPPF, Ref. 74).

The strategic layout of a development site is an important factor in resilient design which can help to reduce the residual risk of flooding, if buildings and access routes are located based on the site topography.

In terms of managing property level flood risk, there are two main strategies:

- Water exclusion strategy - emphasis is on minimising water entry whilst maintaining structural integrity, using materials and construction techniques to facilitate drying and cleaning. This strategy is favoured when low flood water depths are involved (not more than 0.6m). Even with this strategy, water would still be likely to enter the property.
- Water entry strategy - emphasis is on allowing water into the building, facilitating draining and consequent drying. This strategy is favoured when potentially high flood water depths are involved (greater than 0.6m).

Flood resistance measures reduce the risk of flood water from entering a building and can aid recovery from an extreme and rare flood events. Measures include exterior water retaining walls and barriers built into building facades, gates that protect basement areas, doorway flood barriers, and airbrick covers. The effectiveness of flood resistance measures depends upon the occupier understanding the features, using them correctly when required and carrying out appropriate maintenance. Flood resistance measures cannot be used in isolation, but may be useful within a suite of measures including appropriate high finished floor levels and safe access and escape routes.

Flood resilient construction accepts that water will enter a building, but careful design means that damage is minimised; the impact of flooding is reduced. This approach is encouraged in water compatible developments within the functional floodplain. Resilient construction can be achieved more consistently than resistance measures and is less likely to encourage occupiers to remain in buildings that could be inundated by rapidly rising water levels.

The Cambridgeshire Flood and Surface Water SPD (Ref. 46) provides some guidance on flood resistant and resilient design, with more detailed information provided in guidance documents produced by CIRIA (Ref. 12) and CLG (Ref. 7).

3.4 Accounting for flood risk in development planning in Fenland

3.4.1 Section overview

Although flooding cannot be wholly prevented, its impacts can be reduced through good planning and management. This section of the SFRA provides a strategic assessment of the suitability of the potential site allocations across Fenland, including the direct and indirect impact of flood risk on development.

The information and guidance provided in this section is supported by the maps that form part of this document. It provides the basis for which to apply the Sequential Approach in the development allocation and development management process, as described in Section 3.1.1:

1. applying the Sequential Test and, if necessary, the Exception Test;
2. safeguarding land in areas required for current and future flood management; and
3. making use of the opportunities created by new development to reduce causes and impacts of flooding elsewhere, through reducing rates of runoff from the development site, or contributing to wider schemes in the area within the Environment Agency's 6 Year Programme.

Complementary studies such as the FMS, SWMP and available FWMA Section 19 flood investigation reports should be taken into account, together with this SFRA, when allocating sites and determining planning applications.

3.4.2 Assessment of Fenland sites: application of the sequential approach and sequential test

In order to inform the Sequential Approach to Local Plan preparation as illustrated in **Figure 3-1**, a screening exercise has been carried out, overlaying all potential development sites against each of the Flood Zones¹¹. Sites have also been reviewed against the Environment Agency's updated Flood Map for Surface Water to help identify any sites in Flood Zone 1 that may be at risk from surface water flooding, as required by the NPPF (Ref. 74).

This information helps to identify which sites should be avoided through the Sequential Test. It can also be used to assess whether or not employment and housing projections can be met by allocating sites in areas at low risk of flooding. If this is not the case, or where further strategic objectives require areas already at risk of flooding to be developed or regenerated, then the Council should consider the compatibility of vulnerability classifications and Flood Zones and whether or not the Exception Test will be required before allocating sites. A more detailed Level 2 SFRA will be required to support such an assessment.

Table 3-7 shows a summary of the highest flood risk within the potential sites for each Growth Option.

¹¹ Refer to Appendix B for definition of Flood Zones.

It is noted that there is one proposed site for residential development which is partially located within Flood Zone 3b (functional floodplain). This is an existing site for which planning permission has already been granted. However, no buildings are to be located within the high-risk flood zone area and flood risk mitigation measures were agreed for the site.

Table 3-7: Site assessment summary

(Source – Fenland District Council, Environment Agency)

Option	Sites / Capacity	Flood Zone 1 only	Flood Zone 2	Flood Zone 3	Total Sites
Growth Option 1	Sites	40	3	15	58
	Potential capacity	803	43	899	1745
	% Capacity	46.0%	2.5%	51.5%	100%
Growth Option 2	Sites	70	3	25	98
	Potential capacity	6106	43	3569	9718
	% Capacity	62.8%	0.4%	36.7%	100%
Growth Option 2A	Sites	94	6	29	129
	Potential capacity	5793	165	2831	8789
	% Capacity	65.9%	1.9%	32.2%	100%
Growth Option 3	Sites	77	5	32	114
	Potential capacity	5545	141	3818	9504
	% Capacity	58.3%	1.5%	40.2%	100%
Growth Option 4	Sites	85	5	36	126
	Potential capacity	6084	141	4417	10642
	% Capacity	57.2%	1.3%	41.5%	100%
Employment Option 1	Sites	11	0	14	25
Employment Option 2	Sites	8	0	22	30
Employment Option 2A	Sites	10	0	30	40
TOTAL	Sites	124	6	72	202
	Capacity	8358	165	5817	14340

As shown in **Table 3-7**, 124 of the 202 sites under consideration have more than 98% of their area in Flood Zone 1¹² – areas at lowest risk of flooding. A further 11 sites have less than 10% of their area outside of Flood Zone 1 and as such have been defined as being at low risk of flooding. These 135 sites could accommodate 11,818 dwellings, although not all of these sites are included in a single growth option. Growth Option 2A has the highest number of sites in Flood Zone 1, with 92 sites (potential capacity of 5,685), whilst Growth Option 4 has the largest capacity for dwellings within Flood Zone 1, with a potential capacity of 6,829. None of the Growth Options would enable Fenland District Council to achieve its growth targets of 9,823 dwellings by 2040 with only those sites that are located in Flood Zone 1.

Considering the 78 sites which are partly in Flood Zones 2 and 3, 5.1% of total the available area for these sites is outside Flood Zone 1. Dwellings are proposed for 39 sites which are partly located within Flood Zone 3 (high risk), and for 6 sites located within Flood Zone 2. The Sequential Test will need to be passed for these sites to be allocated in the Local Plan, although if there are no other reasonably available sites at lower risk of flooding, then these sites would pass the Sequential Test.

Following application of the Sequential Test, any allocated sites that are partly located in Flood Zone 3 and which include dwellings will require an Exception Test. The 7 sites which are located in Flood Zone 1 but which are at high risk from surface water flooding will also require an Exception Test. More detailed assessment of flood risk and hazard is required from a Level 2 SFRA in order to better understand how flood risk to people and property can be managed satisfactorily for these sites.

¹² Refer to Appendix B for definition of Flood Zones.

A comparison of the Growth Options (excluding Growth Option 1, which does not achieve the required capacity), shows that Growth Option 2A has a higher proportion of potential development capacity located within Flood Zone 1, and the lowest proportion of potential development capacity within Flood Zone 3.

Table 3-8 presents a more detailed assessment of the potential sites. A ‘traffic light’ visualisation method has been applied to present the suitability of the sites regarding flood risk issues. An explanatory key is provided below.

Explanatory key	
Green – Low Risk	<ul style="list-style-type: none"> • Flood risk – more than 98% of the site is within Flood Zone 1. • Surface water flood risk (Very Low) – flooding from severe rainfall has less than 0.1% annual probability. • Surface water flood risk (Low) – flooding within the site boundary due to excessive rainfall has a less than 1% annual probability. • Groundwater flooding – there is limited or no potential for groundwater flooding to occur at the site. • Sewer flooding - there have been less than 2 recorded incidents of sewer flooding (2004 - 2017). • Reservoir flood risk: the site is not at risk from flooding from a reservoir. • Overall flood risk suitability – the site is >98% within Flood Zone 1, has a low or very low risk of surface water flooding and limited or no potential for sewer or groundwater flooding. • The site passes the Sequential Test.
Amber – Medium Risk	<ul style="list-style-type: none"> • Flood risk – site is not fully within Flood Zone 1, but with 10% or less of their area in Flood Zone 3. Sites at medium risk of flooding include those which are partly within Flood Zone 2. • Surface water flood risk (Medium) – flooding within the site boundary due to excessive rainfall has an annual probability of between 1% and 3.33%. The reference (SW) is given in the ‘Overall Flood Risk suitability’ column where the site is in Flood Zone 1 but has a Medium Risk of surface water flooding. • Groundwater flooding – there is potential for groundwater flooding to occur below ground level at the site. The reference (GW) is given in the ‘Overall Flood Risk suitability’ column where the site is in Flood Zone 1 but has a Medium Risk of groundwater flooding. • Sewer flooding - there have been 10 or less recorded incidents of sewer flooding between 2004 and 2017. The reference (S) is given in the ‘Overall Flood Risk suitability’ column where the site is in Flood Zone 1 but has a Medium Risk of sewer flooding. • Reservoir flood risk: the site is at risk from flooding from a reservoir. • Overall flood risk suitability – the site is at medium risk for flood risk or surface water flood risk, and/or is at high risk from groundwater or sewer flooding.
Red – High Risk	<ul style="list-style-type: none"> • Flood risk – sites with more than 10% of their area in Flood Zone 3. • Surface water flood risk (High) – flooding from excessive rainfall has an annual probability of more than 3.33%. The reference (SW) is given in the ‘Overall Flood Risk suitability’ column where the site is in Flood Zone 1 but has a High Risk of surface water flooding. • Groundwater flooding – there is potential for groundwater flooding to occur at ground level at the site. The reference (GW) is given in the ‘Overall Flood Risk suitability’ column where the site is in Flood Zone 1 but has a High Risk of groundwater flooding. • Sewer flooding - there have been 11 or more recorded incidents of sewer flooding between 2004 and 2017. The reference (S) is given in the ‘Overall Flood Risk suitability’ column where the site is in Flood Zone 1 but has a High Risk of sewer flooding. • Overall flood risk suitability – the site is at high risk for flood risk or surface water flood risk.

Project related



Table 3-8: Assessment of site suitability for development based on flood risk.
(Source – Fenland District Council, Environment Agency)

Site Ref.	Growth Option						Site Status	Site Name	Location	Proposed Use	Local Plan Capacity	Size (ha)	Flood Zone, %			Flood Zone	Surface Water flood risk	Groundwater flood risk	Sewer flood risk	Reservoir flood risk	Flood Risk Suitability	Site Specific FRA?	L2 SFRA?
	1	2	2A	3	4	E1							E2	E2A	1								
40001		✓		✓	✓		Allocated	East Wisbech	Wisbech	Housing	950	47.74	99.5	0.5	0.0	1	Low	Low	Low	No	Low	Yes	
40002							Allocated	South Wisbech	Wisbech	Mixed use	0	91.25	48.4	22.1	29.6	3	Low	Low	Low	Yes	High	Yes	
40004							Allocated	Nene Waterfront and Port	Wisbech	Mixed use	0	39.99	4.7	11.3	84.0	3	Low	Low	Low	No	High	Yes	
40005		✓		✓	✓		Allocated	South-east March	March	Housing	750	34.24	89.6	3.0	7.4	3	Low	High	High	No	Medium	Yes	
40007		✓		✓	✓		Allocated	West March	March	Housing	1500	102.71	91.3	1.1	7.6	3	Medium	High	High	No	Medium	Yes	
40008							Allocated	March Trading Estate	March	Employment	0	78.36	75.3	2.2	22.5	3	Medium	High	Low	Yes	High	Yes	
40012		✓	✓	✓	✓		Allocated	N & S of Eastrea Road	Whittlesey	Housing	452	29.80	100.0	0.0	0.0	1	Low	High	Low	Yes	Medium (GW)	Yes	
40017	✓	✓	✓	✓	✓		Approved	Land at 35 North End	Wisbech	Housing	11	0.04	0.0	0.0	100.0	3	Low	Low	Low	No	High	Yes	
40020	✓	✓	✓	✓	✓		Approved	Land W of Council Depot	March	Housing	14	4.03	0.0	0.0	100.0	3	High	High	High	No	High	Yes	
40022	✓	✓	✓	✓	✓		Approved	Aware House Learning Dev. Aids Ltd	Wisbech	Housing	10	0.21	100.0	0.0	0.0	1	High	Low	Low	No	High (SW)	Yes	
40025	✓	✓	✓	✓	✓		Approved	Land E of 46 Old Lynn Rd	Wisbech	Housing	149	5.63	0.1	3.5	96.4	3	Low	Low	Low	No	High	Yes	
40028	✓	✓	✓	✓	✓		Approved	Christchurch Memorial Hall	Christchurch	Housing	9	0.42	100.0	0.0	0.0	1	Low	Low	Low	No	Low		
40031	✓	✓	✓	✓	✓		Approved	Former Kingswood Park Res. Home	March	Housing	24	0.98	100.0	0.0	0.0	1	High	High	High	No	High (SW)	Yes	
40033	✓	✓	✓	✓	✓		Approved	Land South of Jones Lane	Eastrea	Housing	6	0.29	100.0	0.0	0.0	1	Low	Medium	Low	Yes	Low		
40036	✓	✓	✓	✓	✓		Approved	Land E of Davern Workwear Ltd	March	Housing	12	0.48	62.1	20.8	17.2	3	Medium	Low	High	No	High	Yes	
40037	✓	✓	✓	✓	✓		Approved	Davern Workwear Ltd	March	Housing	18	0.66	69.2	17.3	13.5	3	Low	Low	High	No	High	Yes	
40038	✓	✓	✓	✓	✓		Approved	Land N of 28-30 High St	Manea	Housing	32	0.87	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40041	✓	✓	✓	✓	✓		Approved	Land East of Berryfield	March	Housing	28	1.19	100.0	0.0	0.0	1	Low	High	High	No	Medium (S/GW)	Yes	
40042	✓	✓	✓	✓	✓		Approved	Land N of Whittlesey E of E Delph	Whittlesey	Housing	220	14.97	59.1	0.3	40.7	3	Low	High	Low	No	High	Yes	
40043	✓	✓	✓	✓	✓		Approved	Land Rear of 36 High St	March	Housing	7	0.12	100.0	0.0	0.0	1	Low	Medium	High	No	Medium (S)		
40045	✓	✓	✓	✓	✓		Approved	Land N of Orchard House	Wisbech St Mary	Housing	76	3.82	56.2	7.0	36.7	3	Low	Low	Low	No	High	Yes	
40048	✓	✓	✓	✓	✓		Approved	Lavender Mill Bungalow	Manea	Housing	29	1.14	97.0	1.1	1.8	2	Low	Low	Medium	No	Medium	Yes	
40050	✓	✓	✓	✓	✓		Approved	Former Highways Depot	March	Housing	34	1.15	100.0	0.0	0.0	1	High	High	High	No	High (SW)	Yes	
40052	✓	✓	✓	✓	✓		Approved	321 Wisbech Road	March	Housing	9	0.68	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40053	✓	✓	✓	✓	✓		Approved	33 And Land N of 17-31	Elm	Housing	50	1.72	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40054	✓	✓	✓	✓	✓		Approved	26 Bridge Street	Chatteris	Housing	5	0.03	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40056	✓	✓	✓	✓	✓		Approved	College of West Anglia	Wisbech	Housing	137	6.11	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40057	✓	✓	✓	✓	✓		Approved	Land W of 15 Fairbairn Way	Chatteris	Housing	50	1.78	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40059	✓	✓	✓	✓	✓		Approved	CFC Disposals Ltd	Christchurch	Housing	16	0.65	100.0	0.0	0.0	1	Low	Low	Low	Yes	Low		
40060	✓	✓	✓	✓	✓		Approved	Land E of 38 March Road	Wimblington	Housing	5	3.30	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40067	✓	✓	✓	✓	✓		Approved	Land E of 88 Sutton Road	Leverington	Housing	220	8.72	36.7	0.0	63.3	3	Low	Low	Low	No	High	Yes	
40070	✓	✓	✓	✓	✓		Approved	Land SE of 208 Coates Rd	Coates	Housing	60	2.73	100.0	0.0	0.0	1	Low	High	Low	No	Medium (GW)	Yes	
40072			✓				Approved	Land W & S of 74 West St	Chatteris	Housing	58	2.80	79.5	7.1	13.4	3	Low	Low	Medium	Yes	High	Yes	
40073	✓	✓	✓	✓	✓		Approved	Site of Former Gas Distribution Centre	March	Housing	19	0.45	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		
40074	✓	✓	✓	✓	✓		Approved	Land N of 37-45 King S	Wimblington	Housing	25	1.70	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40076	✓	✓	✓	✓	✓		Approved	Land E of 11-21 Park Rd	Manea	Housing	13	1.23	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40077	✓	✓	✓	✓	✓		Approved	Land N of The Green and N of 145-159 Wisbech Rd	March	Housing	118	4.86	74.0	3.7	22.3	3	Low	High	High	No	High	Yes	
40079	✓	✓	✓	✓	✓		Approved	Land N & E of 1-3 Wimblington Rd	Doddington	Housing	13	1.12	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40082	✓	✓	✓	✓	✓		Approved	Land N & W of Elliott Lodge	March	Housing	13	0.39	100.0	0.0	0.0	1	Low	Low	High	No	Medium (S)		
40083	✓	✓	✓	✓	✓		Approved	Land W of Cedar Way (Grove Gardens)	Elm	Housing	5	0.92	100.0	0.0	0.0	1	Low	Low	Low	No	Low		
40087	✓	✓	✓	✓	✓		Approved	Land N of 3A-9 Bridge Lane	Wimblington	Housing	7	1.51	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40093	✓	✓	✓	✓	✓		Approved	Land NW of 12 Knights End Rd	March	Housing	9	0.69	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		
40103			✓				New site	Trafford Farm	Wisbech St Mary	Mixed use	90	3.64	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40104R			✓				New site	Land at Gote Lane	Gorefield	Housing	30	1.18	98.7	1.3	0.0	1	Low	Low	Low	No	Low	Yes	
40105		✓	✓	✓	✓		New site	Rear of 131-137 Upwell Rd	March	Housing	9	0.50	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40115			✓				New site	Land at Mill Hill	March	Housing	55	2.21	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40117					✓		New site	Lake Drove	Eastrea	Housing	147	6.84	92.5	1.7	5.8	3	Low	Medium	Low	Yes	Medium	Yes	
40126R			✓				New site	Land east of Berryfield	March	Housing	24	0.97	87.8	12.2	0.0	2	Low	High	High	No	Medium	Yes	
40127		✓	✓	✓	✓		New site	Well End	Friday Bridge	Housing	6	0.51	100.0	0.0	0.0	1	Low	Low	Low	No	Low		
40133		✓	✓	✓	✓		New site	Land E of Woodgate Rd	Leverington	Housing	96	3.87	99.5	0.0	0.5	1	Low	Low	Low	No	Low	Yes	

Project related



Site Ref.	Growth Option							Site Status	Site Name	Location	Proposed Use	Local Plan Capacity	Size (ha)	Flood Zone, %			Flood Zone	Surface Water flood risk	Groundwater flood risk	Sewer flood risk	Reservoir flood risk	Flood Risk Suitability	Site Specific FRA?	L2 SFRA?
	1	2	2A	3	4	E1	E2							E2A	1	2								
40135			✓	✓	✓			New site	Land N of March Road	Coldham	Housing	11	0.34	0.0	100.0	0.0	2	Low	Low	Low	Yes	Medium	Yes	
40137			✓					New site	Collett's Bridge Lane	Collett's Bridge	Housing	10	0.52	100.0	0.0	0.0	1	Low	Low	Low	No	Low		
40139				✓	✓			New site	Land to S of 4-40 Benwick Rd	Doddington	Housing	53	2.15	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40140R			✓	✓	✓			New site	Land W of Turf Fen Lane, S of Newgate Street	Doddington	Housing	155	13.76	55.1	2.2	42.7	3	Low	Low	Medium	No	High	Yes	Yes
40143			✓	✓	✓			New site	Land off Wood Street Ph3	Doddington	Housing	17	0.62	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40145					✓			New site	Land at Wype Road	Eastrea	Housing	109	5.08	100.0	0.0	0.0	1	Low	Medium	Low	Yes	Low	Yes	
40147			✓					New site	Land at Gull Drove	Guyhirn	Housing	15	0.92	95.9	0.0	4.1	3	Low	High	Low	No	Medium (GW)	Yes	
40150		✓	✓	✓	✓			New site	Front Road	Murrow	Housing	7	0.48	100.0	0.0	0.0	1	Low	High	Low	No	Medium (GW)		
40151				✓	✓			New site	Land at Blue Lane	Wimblington	Housing	77	3.12	100.0	0.0	0.0	1	Low	Low	Medium	No	Low	Yes	
40152		✓	✓	✓	✓			New site	Land north of King St	Wimblington	Housing	46	1.64	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40158			✓					New site	Land at Meadowgate	Wisbech	Housing	10	1.23	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40163		✓	✓	✓	✓			New site	Chrysanthemum House	Wisbech	Care Home	77	1.97	43.8	0.0	56.2	3	Low	Low	Low	No	High	Yes	Yes
40171			✓					New site	Land at Sunset, Station Rd	Wisbech St Mary	Housing	51	2.08	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40173			✓	✓	✓			New site	Land off Wood St Ph2	Doddington	Housing	10	0.45	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40185			✓	✓	✓			New site	Land to rear of 15 Westfield Rd	Manea	Housing	10	0.65	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40190		✓	✓					New site	Land to rear of No. 81	March	Housing	98	3.94	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)	Yes	
40194			✓					New site	Land SE of 433 Wisbech Rd	March	Housing	8	0.53	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40198	✓	✓	✓	✓	✓			New site	Minuet Phase 2	Coates	Housing	20	1.35	100.0	0.0	0.0	1	Low	Medium	Low	No	Low	Yes	
40207R			✓	✓	✓			New site	Land to rear of Neneside	Guyhirn	Housing	5	0.37	63.5	0.0	36.5	3	Low	Low	Low	No	High	Yes	Yes
40211R			✓					New site	Land S of Salisbury House, Blackmill Rd	Chatteris	Housing	100	4.17	100.0	0.0	0.0	1	Low	Low	Medium	No	Low	Yes	
40215					✓			New site	Land south of Bridge Lane	Wimblington	Housing	50	2.34	100.0	0.0	0.0	1	Medium	High	Medium	No	Medium (SW/GW)	Yes	
40217					✓			New site	Land south of Bridge Lane	Wimblington	Housing	66	3.07	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40223			✓	✓	✓			New site	West Field	Manea	Housing	105	4.25	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low	Yes	
40229					✓			New site	Land at Sparrow Lane	Wimblington	Housing	9	0.42	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40233					✓			New site	Land S of 80 Coates Rd	Eastrea	Housing	177	8.25	100.0	0.0	0.0	1	Low	Medium	Low	No	Low	Yes	
40235			✓					New site	Land N of Benwick Road	Doddington	Housing	31	1.10	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40237		✓						New site	Land off Eastrea Road	Whittlesey	Housing	584	27.22	100.0	0.0	0.0	1	Low	High	Low	Yes	Medium (GW)	Yes	
40241R			✓					New site	6 March Road	Rings End	Housing	8	0.24	99.2	0.8	0.0	1	Low	Low	Low	Yes	Low		
40250				✓	✓			New site	Land S of 16A Doddington Rd	Benwick	Housing	31	1.11	0.0	0.0	100.0	3	Low	High	Medium	No	High	Yes	
40252		✓	✓	✓	✓			New site	Land north east of March	March	Housing	294	13.69	98.6	1.4	0.0	1	Low	High	Low	No	Medium (GW)	Yes	
40258					✓			New site	Land South of Coates Rd	Eastrea	Housing	233	10.86	95.0	1.3	3.7	3	Low	Medium	Low	Yes	Medium	Yes	
40259				✓	✓			New site	Land rear of 127 Wype Rd	Eastrea	Housing	107	5.00	93.5	1.5	5.1	3	Low	Medium	Low	Yes	Medium	Yes	
40262		✓	✓	✓	✓			New site	Behind High St shops, S of the river	March	Mixed use	55	4.47	99.4	0.1	0.6	1	Low	High	High	Yes	Medium (GW/S)	Yes	
40263		✓	✓	✓	✓			New site	Land to west of Hereward Hall	March	Housing	19	0.62	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		
40264		✓	✓	✓	✓			New site	Land to E of Norwood Road	March	Housing	50	1.77	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)	Yes	
40265			✓					New site	Land north of March Road	Coates	Housing	232	10.83	100.0	0.0	0.0	1	Low	Medium	Low	Yes	Low	Yes	
40270						✓	✓	New site	SW of A605 realignment at Kings Dyke	Whittlesey	Mixed use	0	11.81	30.0	5.1	65.0	3	Low	Medium	Low	No	High	Yes	Yes
40274				✓	✓			New site	Land NE of 39B-43 Ramsey Rd	Benwick	Mixed use	6	8.26	0.0	0.0	100.0	3	Low	High	Medium	No	High	Yes	
40276						✓		New site	Land N of Mill Hill Garage	March	Employment	0	0.35	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40278			✓		✓			New site	Land east of March Road	Wimblington	Housing	97	3.90	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40284		✓						New site	Land off Wenny Road	Chatteris	Housing	260	25.97	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40285			✓					New site	Land N of Knight's End Rd, E of A141	March	Housing	1200	50.53	91.6	1.2	7.2	3	Low	High	Low	No	Medium	Yes	
40286						✓		New site	Land N of Isle of Ely Way	March	Mixed use	0	4.02	39.6	19.6	40.8	3	Low	High	Medium	No	High	Yes	Yes
40288		✓	✓	✓	✓			New site	Land W side of Fenland Way	Chatteris	Mixed use	20	15.21	39.0	6.2	54.8	3	Low	High	Medium	Yes	High	Yes	Yes
40290						✓	✓	New site	Westry Retail Park	March	Employment	0	6.47	0.8	1.0	98.2	3	High	High	Low	No	High	Yes	Yes
40300		✓	✓	✓	✓			New site	Land at Eastrea Road	Whittlesey	Housing	156	7.25	100.0	0.0	0.0	1	Low	High	Low	Yes	Medium	Yes	
40302		✓	✓	✓	✓			New site	Land at Swanbridge Farm	Parson Drove	Housing	8	0.44	86.7	0.2	13.1	3	Low	High	Low	No	High	Yes	Yes
40303			✓	✓	✓			New site	Land at Selwyn Lodge Farm	Guyhirn	Housing	15	0.92	79.1	0.0	20.9	3	Low	High	Low	No	High	Yes	Yes
40305			✓	✓	✓			New site	Land at Rookery Farm	Friday Bridge	Housing	87	3.50	77.8	20.7	1.4	2	Low	Low	Low	No	Medium	Yes	
40307R			✓					New site	Land at Willock Farm	Wisbech St Mary	Housing	10	0.72	100.0	0.0	0.0	1	Low	High	Low	No	Medium		
40315		✓	✓	✓	✓			New site	Hereward Hall	March	Mixed use	19	1.35	100.0	0.0	0.0	1	Medium	High	High	No	Medium (SW/GW/S)	Yes	
40316		✓	✓	✓	✓			New site	Queen's Street Close Car Park	March	Housing	6	0.17	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		

Project related



Site Ref.	Growth Option							Site Status	Site Name	Location	Proposed Use	Local Plan Capacity	Size (ha)	Flood Zone, %			Flood Zone	Surface Water flood risk	Groundwater flood risk	Sewer flood risk	Reservoir flood risk	Flood Risk Suitability	Site Specific FRA?	L2 SFRA?
	1	2	2A	3	4	E1	E2							E2A	1	2								
40319			✓	✓	✓			New site	Land East of Flint Way	Friday Bridge	Housing	137	6.40	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40321						✓	✓	New site	Land East of Ben Burgess	Coates	Employment	0	4.78	96.5	1.4	2.1	3	Low	High	Low	Yes	Medium	Yes	
40325		✓	✓	✓	✓			New site	Land rear of 2-8 Gibside	Chatteris	Housing	6	0.18	100.0	0.0	0.0	1	Low	Low	Medium	No	Low		
40326		✓	✓	✓	✓			New site	Land East of 80 The Elms	Chatteris	Housing	90	3.65	100.0	0.0	0.0	1	Medium	Low	Medium	No	Medium (SW)	Yes	
40327						✓	✓	New site	South Fens Enterprise Park	Chatteris	Employment	0	0.92	0.0	0.0	100.0	3	Low	Low	Medium	Yes	High	Yes	Yes
40328			✓					New site	Land S of 104-178 March Rd	Coates	Housing	117	6.15	89.0	3.6	7.4	3	Low	High	Low	Yes	Medium	Yes	
40335		✓	✓	✓	✓			New site	Land to rear of 98-112 Drybread Road	Whittlesey	Housing	11	0.32	100.0	0.0	0.0	1	Low	Medium	Low	No	Low		
40337		✓	✓	✓	✓			New site	Site at 5 North Street	Wisbech	Mixed use	10	0.11	0.0	0.0	100.0	3	Low	Low	Low	No	High	Yes	Yes
40338		✓	✓	✓	✓			New site	Nene Waterfront	Wisbech	Mixed use	178	1.58	0.0	29.2	70.8	3	Low	Low	Low	No	High	Yes	Yes
40348		✓						New site	Land to E and S of Drybread Road	Whittlesey	Housing	179	8.35	100.0	0.0	0.0	1	Low	High	Low	Yes	Medium (GW)	Yes	
40351							✓	New site	Land to NW of Mill Hill Roundabout	Open countryside	Employment	0	5.30	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40364R			✓					New site	Hockland Road plot	Tydd St Giles	Housing	12	0.35	100.0	0.0	0.0	1	Low	Low	Low	No	Low		
40366		✓	✓	✓	✓			New site	Former Pike Textiles	Wisbech	Housing	21	0.62	0.0	0.0	100.0	3	Low	Low	Low	No	High	Yes	Yes
40367		✓	✓	✓	✓			New site	Womb Farm	Chatteris	Housing	248	8.40	98.6	0.9	0.5	1	Low	High	Medium	Yes	Medium (GW)	Yes	
40368			✓	✓	✓			New site	Land adjoining Parrock View	Newton	Housing	6	0.32	98.8	1.2	0.0	1	Low	Low	Low	No	Low		
40369R			✓					New site	Land adjacent to the fern	Christchurch	Housing	10	0.29	99.7	0.3	0.0	1	Low	Low	Low	No	Low		
40371		✓	✓	✓	✓			New site	Land off Halfpenny Lane	Wisbech	Housing	316	14.74	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes	
40372					✓			New site	Land SW of Wype Road	Eastrea	Mixed use	144	6.72	95.8	1.3	3.0	3	Low	High	Low	Yes	Medium	Yes	
40374					✓			New site	Land N of 47 King Street	Wimblington	Housing	33	1.54	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40375				✓	✓			New site	Land north of 17 Doddington Rd	Benwick	Housing	20	0.70	0.0	3.3	96.7	3	Low	High	Medium	No	High	Yes	
40376					✓			New site	Land South of Jones Lane	Eastrea	Housing	75	3.49	94.0	3.1	2.9	3	Low	High	Low	Yes	Medium	Yes	
40380				✓	✓			New site	Land opposite Coney Walk in Blue Lane	Wimblington	Housing	34	1.20	100.0	0.0	0.0	1	Low	Low	Medium	No	Low	Yes	
40382		✓	✓	✓	✓			New site	Land S of Knight's End Road and W of Wimblington Road	March	Housing	341	15.88	98.7	0.9	0.4	1	High	High	Low	No	High (SW)	Yes	Yes
40384		✓	✓	✓	✓			New site	Land South of Chatteris	Chatteris	Mixed use	1000	67.75	99.3	0.6	0.1	1	Low	High	Medium	No	Medium (GW)	Yes	
40386					✓	✓	✓	Approved	Freedom Motorcycles, Mill View	March	Employment	0	0.19	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		
40390					✓			Approved	Land W of 30, Thorby Avenue	March	Employment	0	0.51	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40393					✓			Approved	Land W of Roll out the Red	March	Mixed use	0	0.65	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40398					✓	✓	✓	Approved	Plot 4 Land SW of 47 Algores Way	Wisbech	Employment	0	0.23	0.0	32.2	67.8	3	Low	Low	Low	Yes	High	Yes	
40402					✓	✓	✓	Approved	Land S of Foster Business Park, Boleness Road	Wisbech	Mixed use	0	1.74	30.3	0.9	68.8	3	Low	Low	Low	Yes	High	Yes	
40403					✓	✓	✓	Approved	Eclipse Scientific Group	Chatteris	Employment	0	0.74	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40404					✓			Approved	Agrihold Farm Machinery UK Ltd, 1, Martin Avenue	March	Employment	0	0.83	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40408					✓	✓	✓	Approved	Land W of Fenton Way, E of Iretons Way	Chatteris	Mixed use	0	8.67	0.0	0.0	100.0	3	Low	Low	Medium	Yes	High	Yes	
40409					✓	✓	✓	Approved	SW of Doddington Road	Chatteris	Employment	0	0.15	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low		
40411					✓			Approved	Land North of 57, Thorby Avenue	March	Mixed use	0	0.52	100.0	0.0	0.0	1	High	High	Medium	No	High (SW)	Yes	
40412					✓			Approved	Land at Junction of A47 & Cromwell Rd	Wisbech	Mixed use	0	3.59	4.9	40.6	54.5	3	Low	Low	Low	Yes	High	Yes	
40415					✓	✓	✓	Approved	H L Hutchinson Ltd, Weasenham Lane	Wisbech	Employment	0	0.55	0.0	0.0	100.0	3	Low	Low	Low	No	High	Yes	
40416					✓			Approved	Land at Wombfarm	Chatteris	Mixed use	0	9.19	96.9	1.0	2.1	3	Low	High	Medium	No	Medium	Yes	
40417					✓	✓	✓	Approved	Lattersey Field, Benwick Rd	Whittlesey	Mixed use	0	9.30	100.0	0.0	0.0	1	Low	High	Low	No	Medium (GW)	Yes	
40420					✓	✓	✓	Approved	March Cold Stores 20-24 Marwick Rd	March	Employment	0	2.99	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)	Yes	
40424R			✓					New site	Station Rd next to Grantchester House	Wisbech St Mary	Housing	9	0.27	99.3	0.7	0.0	1	Low	Low	Low	No	Low		
40426		✓	✓	✓	✓			New site	Land south of Benwick Road	Doddington	Housing	55	1.97	100.0	0.0	0.0	1	Low	Low	Medium	No	Low	Yes	
40427			✓					New site	Land south of Wimblington Road	Doddington	Housing	40	3.16	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes	
40430			✓					New site	Westry Hall	March	Mixed use	62	2.49	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low	Yes	
40434		✓	✓	✓	✓			New site	Land fronting Elm Road and south and west of Highfield House	March	Housing	9	0.28	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		
40443		✓		✓	✓			Approved	Land at Showfields	Whittlesey	Housing	53	1.88	79.4	0.0	20.6	3	Low	High	Low	No	High	Yes	
40444			✓					New site	28 Wimblington Road	Doddington	Housing	13	0.38	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)		
40446		✓	✓	✓	✓			New site	Land W of 85 Wimblington Road	March	Mixed use	18	0.85	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)		
40447		✓	✓	✓	✓			New site	Womb Farm	Chatteris	Mixed use	53	1.88	81.9	4.5	13.6	3	Low	High	Medium	Yes	High	Yes	Yes
40450				✓	✓			New site	Slaves Hill	Doddington	Housing	100	4.68	100.0	0.0	0.0	1	Low	Low	Medium	No	Low	Yes	
40451R			✓					New site	Land S of Brewery Close & Ingham Hall Gardens	Parson Drove	Housing	30	1.85	99.8	0.2	0.0	1	Low	High	Low	No	Medium (GW)	Yes	

Project related



Site Ref.	Growth Option						Site Status	Site Name	Location	Proposed Use	Local Plan Capacity	Size (ha)	Flood Zone, %			Flood Zone	Surface Water flood risk	Groundwater flood risk	Sewer flood risk	Reservoir flood risk	Flood Risk Suitability	Site Specific FRA?	L2 SFRA?		
	1	2	2A	3	4	E1							E2	E2A	1									2	3
40453				✓	✓			New site	Land west of 35 New Street	Doddington	Housing	11	0.53	100.0	0.0	0.0	1	Low	Low	Medium	No	Low			
40454							✓	New site	First Furlong Drive	Chatteris	Employment	0	70.45	0.0	0.0	100.0	3	Low	High	Medium	Yes	High	Yes	Yes	
40455							✓	New site	Honeysome Road	Chatteris	Employment	0	11.16	0.0	0.0	100.0	3	Low	Low	Medium	Yes	High	Yes	Yes	
40456							✓	New site	Ireton's Way	Chatteris	Employment	0	11.35	17.6	14.2	68.2	3	Low	High	Medium	Yes	High	Yes	Yes	
40457							✓	New site	Fenton Way	Chatteris	Employment	0	13.36	0.0	0.0	100.0	3	Low	Low	Medium	Yes	High	Yes	Yes	
40458							✓	New site	Fenton Way Mandleys	Chatteris	Employment	0	8.38	0.0	0.0	100.0	3	Low	Low	Medium	Yes	High	Yes	Yes	
40459							✓	New site	Short First Nightlayers	Chatteris	Employment	0	7.02	0.0	0.0	100.0	3	Low	Low	Medium	Yes	High	Yes	Yes	
40463		✓	✓	✓	✓			New site	Land north west Syringa House	Christchurch	Housing	23	0.82	100.0	0.0	0.0	1	Low	Low	Low	No	Low			
40468							✓	New site	Coldham Wind Farm	Open countryside	Wind energy	0	98.74	0.0	0.3	99.7	3	Low	Low	Low	Yes	High	Yes	Yes	
40469							✓	New site	Land adjacent to Graysmoor Drive	Open countryside	Wind energy	0	174.21	0.0	0.1	99.9	3	Low	High	Low	Yes	High	Yes	Yes	
40491							✓	New site	Land off New Road	Chatteris	Employment	0	0.82	28.4	5.2	66.4	3	Low	Low	Medium	Yes	High	Yes	Yes	
40496					✓			New site	Land at 16 Bridge Lane	Wimblington	Housing	11	0.53	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)			
40497							✓	New site	Metalcraft Business Park	Chatteris	Mixed use	0	14.59	18.1	1.8	80.1	3	Low	Low	Medium	Yes	High	Yes	Yes	
40499		✓	✓	✓	✓			New site	Land on W side of 92 London Rd	Chatteris	Housing	52	1.87	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes		
40502							✓	New site	Vacant site, Kings Dyke	Whittlesey	Mixed use	0	1.23	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes		
40503	✓	✓	✓	✓	✓			Approved	Land NE of 53 The Chase	Leverington	Housing	9	0.94	0.4	97.6	1.9	2	Low	Low	Low	No	Medium	Yes		
40504	✓	✓	✓	✓	✓			Approved	Land east of The Silverings 114	Parson Drove	Housing	5	0.41	0.0	28.4	71.6	3	Low	High	Low	No	High	Yes		
40505	✓	✓	✓	✓	✓			Approved	22 London Road	Chatteris	Housing	7	0.28	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low			
40506	✓	✓	✓	✓	✓			Approved	11-12 High Street	Wisbech	Housing	15	0.03	100.0	0.0	0.0	1	Low	Low	Low	No	Low			
40509	✓	✓	✓	✓	✓			Approved	Wisbech Vehicle Exchange	Wisbech	Housing	9	0.24	100.0	0.0	0.0	1	Low	Low	Low	No	Low			
40511	✓	✓	✓	✓	✓			Approved	Nelson House, 22 Norwood Road	March	Housing	5	0.13	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)			
40513	✓	✓	✓	✓	✓			Approved	Site of Old British Gas Depot	Wisbech	Housing	19	0.53	0.0	0.0	100.0	3	Low	Low	Low	No	High	Yes		
40514	✓	✓	✓	✓	✓			Approved	Land North of 3A-15	Gorefield	Housing	5	0.51	0.0	100.0	0.0	2	Low	Low	Low	No	Medium	Yes		
40517	✓	✓	✓	✓	✓			New site	15 Station Road	March	Housing	26	0.08	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)			
40518	✓	✓	✓	✓	✓			Approved	Land N of The Barn, High Road	Wisbech St Mary	Housing	5	0.34	15.4	47.7	36.9	3	Low	High	Low	No	High	Yes		
40519	✓	✓	✓	✓	✓			Approved	Land E of 133 High Street	Chatteris	Housing	9	0.29	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low			
40520	✓	✓	✓	✓	✓			Approved	Land NW of Nemphlar Begdale Rd, Elm	Open countryside	Traveller site	0	0.90	28.4	55.0	16.6	3	Low	Low	Low	Yes	High	Yes		
40521	✓	✓	✓	✓	✓			Approved	Dennicks Yard Back Road	Gorefield	Housing	14	2.40	31.5	66.0	2.4	3	Low	Low	Low	No	Medium	Yes		
40522	✓	✓	✓	✓	✓			Approved	18 Westfield Road	Manea	Housing	5	0.17	100.0	0.0	0.0	1	Low	Medium	Medium	No	Low			
40523	✓	✓	✓	✓	✓			Approved	72 - 74 High Street	March	Housing	9	0.09	100.0	0.0	0.0	1	Low	High	High	No	Medium (GW/S)			
40524	✓	✓	✓	✓	✓			Approved	WH Feltham & Son Cawood Close	March	Housing	9	0.56	100.0	0.0	0.0	1	High	High	High	No	High (SW)	Yes		
40525	✓	✓	✓	✓	✓			Approved	Land SW of 1-23 Springfield Ave	March	Housing	40	1.63	100.0	0.0	0.0	1	High	High	High	No	High (SW)	Yes		
40526	✓	✓	✓	✓	✓			Approved	158 Stonald Road	Whittlesey	Housing	18	1.33	78.7	0.2	21.1	3	Low	Medium	Low	No	High	Yes		
40527	✓	✓	✓	✓	✓			Approved	Land N&S Of Grosvenor House, Grosvenor Road	Whittlesey	Housing	9	0.12	100.0	0.0	0.0	1	Low	Medium	Low	No	Low			
40528	✓	✓	✓	✓	✓			Approved	Land W of 36 Peterborough Rd	Whittlesey	Housing	9	0.31	100.0	0.0	0.0	1	Low	Low	Low	No	Low			
40529	✓	✓	✓	✓	✓			Approved	Land N of Stoneleigh 22A Eaton Estate	Wimblington	Housing	30	1.42	100.0	0.0	0.0	1	Low	High	Medium	No	Medium (GW)	Yes		
40530	✓	✓	✓	✓	✓			Approved	134A Ramnoth Road	Wisbech	Housing	9	0.49	100.0	0.0	0.0	1	Low	Low	Low	No	Low			
40531	✓	✓	✓	✓	✓			Approved	Land W of Sunset Rooms Station Rd	Wisbech St Mary	Housing	6	0.26	100.0	0.0	0.0	1	Low	Low	Low	No	Low			
40532						✓	✓	✓	Approved	Land NE of 1 Ashley Industrial Est	Whittlesey	Employment	0	0.41	100.0	0.0	0.0	1	Low	High	Low	No	Medium (GW)		
40533						✓	✓	✓	Approved	Land S of Newberry, Roman Bank	Open countryside	Employment	0	0.35	98.3	1.7	0.0	1	Low	Low	Low	No	Low		
40534						✓	✓	✓	Approved	Land SE of Burrall Plas Tec Ltd	Wisbech	Employment	0	7.48	0.0	0.0	100.0	3	Low	Low	Low	Yes	High	Yes	
40535						✓	✓	✓	Approved	Gaul Farm Industrial Units	March	Mixed use	0	1.03	0.0	0.0	100.0	3	Low	Low	Medium	No	High	Yes	
40536						✓	✓	✓	Approved	Land NE Of 25 Cromwell Rd	Wisbech	Mixed use	0	2.04	0.0	83.1	16.8	3	Low	Low	Low	Yes	High	Yes	
40537						✓	✓	✓	Approved	Storage Building, Dagless Ltd, N of Brigstock Road	Wisbech	Employment	0	1.94	0.0	0.0	100.0	3	Low	Low	Low	No	High	Yes	
40538						✓	✓	✓	Approved	11 Europa Way	Wisbech	Employment	0	0.77	1.6	8.9	89.6	3	High	Low	Low	Yes	High	Yes	
40539						✓	✓	✓	Approved	Unit W of Jacks, Fenland Way	Chatteris	Employment	0	1.73	64.1	14.2	21.7	3	Low	Low	Medium	No	High	Yes	
40540						✓	✓	✓	Approved	38 Whittlesey Road	March	Employment	0	0.67	0.0	0.0	100.0	3	Low	Low	Medium	No	High	Yes	
40541						✓	✓	✓	Approved	Coleseed Business Complex, Upwell Rd	March	Employment	0	0.56	0.0	0.0	100.0	3	Low	Low	Medium	No	High	Yes	
40322/ 40306R			✓					New site	Revised proposal, sites 40322 & 40360R	Elm	Housing	215	10.01	100.0	0.0	0.0	1	Low	Low	Low	No	Low	Yes		
40373/ 40498R			✓					New site	Revised proposal, sites 40373 & 40498	Leverington	Housing	100	4.31	98.3	0.7	1.1	1	Low	Low	Low	No	Low	Yes		

3.4.3 When is a site-specific FRA required?

In accordance with the NPPF, a site-specific FRA is required in the following cases:

- in Flood Zone 2 or 3 including minor development and change of use;
- more than 1 hectare (ha) in flood zone 1;
- less than 1 ha in Flood Zone 1, including a change of use in development type to a more vulnerable class (e.g. from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (e.g. surface water drains, reservoirs); and
- in an area within Flood Zone 1 which has critical drainage problems as notified by the Environment Agency.

Flood risk assessments should consider the flood risk to properties and people and show how it will be managed at the site, including any opportunities to reduce flooding, use of sustainable drainage systems and how any requirement for safe access to and from the development will be addressed. The level of detail in a flood risk assessment depends on the level of flood risk at the site.

Based on **Table 3-8** above, a site specific FRA will be required for many of the potential development sites. To support the preparation of those FRAs it is recommended that more detailed flood risk information is developed for the preferred growth option, in the form of a Level 2 SFRA, focussing on those sites included in the preferred Growth Options which are at high risk of flooding and which do not currently have a site specific flood risk assessment, as follows:

- Wisbech and adjacent villages (6 sites)
- March and Chatteris and adjacent villages (14 sites)
- Whittlesey (1 site)
- Guyhirn and Coldham (4 sites)

3.5 Sustainable Drainage Systems (SuDS)

3.5.1 Impact of development on flood risk

Development has the potential to cause an increase in impermeable area, an associated increase in surface water runoff rates and volumes, and a consequent potential increase in downstream flood risk and overloading of drainage infrastructure. Managing surface water discharges from new development is therefore crucial in managing and reducing flood risk to new and existing development downstream. Carefully planned development also plays a role in reducing the number of properties that are directly at risk from surface water flooding.

3.5.2 What are SuDS, and when to use them

SuDS are water management practices which enable surface water to be drained in a way which imitates, as closely as possible, the run-off prior to site development. The choice of flow management facilities within a single site is heavily influenced by constraints including (but not limited to): topography, geology (soil permeability), available area, former site use, proposed site use, groundwater conditions and future adoption and maintenance possibilities.

Policy and guidance for SuDS

The NPPF (Ref. 74) requires all development to give priority to the use of Sustainable Drainage Systems (SuDS). The NPPG (Ref. 28) further sets out the appropriate use of SuDS as a way of using the opportunities offered by development to reduce the causes and impacts of flooding.

Approved Document Part H of the Building Regulations 2000 (Ref. 62) establishes a hierarchy for surface water disposal that identifies the use of SuDS as first option and encourages infiltration such as soakaways or infiltration trenches, which have benefits for groundwater recharge. Attenuation SuDS slow down the flow of water into the drainage network by storing and gradually releasing water. Infiltration SuDS can require less space than attenuation solutions. In all cases, it should be established whether these options are feasible, can be adopted and properly maintained and would not lead to any other environmental problems.

SuDS approval is currently being delivered through the development planning approval process. The requirement for suitable SuDS to be provided as part of new development currently applies to major developments – i.e. residential developments of 10+ houses; equivalent non-residential development and/or mixed development – with drainage implications. Minor developments with drainage implications continue to be subject to existing planning policy. The LPA is required to consult the LLFA for major developments. Cambridgeshire County Council is the LLFA for Fenland District.

The design, construction and ongoing maintenance regime of a SuDS scheme must be carefully defined as part of a site-specific FRA, as well as details of future adoption. This needs a clear and comprehensive understanding of the catchment hydrological processes (i.e. nature and capacity of the existing drainage system) is essential. The SuDS Manual (Ref. 42) was published by CIRIA in 2015 and provides detailed technical guidance for developers on all relevant aspects. Best practice provided by the SuDS Manual recommends the optimisation of multiple benefits to manage water quantity and quality and deliver amenity and biodiversity benefits from SuDS.

SuDS design in Fenland

The Cambridgeshire Flood and Surface Water SPD (Ref. 46) identifies that SuDS provide opportunities to effectively manage surface water; be aesthetically pleasing; conserve, accommodate and enhance biodiversity and provide amenity for residents. The benefits of SuDS over traditional drainage methods are:

- Management of runoff volumes and flow rates from hard surfaces, reducing the impact of urbanisation on flooding
- Reduction of pollution in the runoff and hence protection or enhancement of water quality
- Protection of natural flow regimes in watercourses
- Provision of habitat for wildlife
- Opportunities for evapotranspiration from vegetation and the surface (reduction in quantity of surface water)
- They can be designed to be sympathetic to the environment and the needs of the local community
- Good SuDS create better places to live, work and play through safer and more aesthetically pleasing communities with better access to green infrastructure provision.

The principles governing SuDS design in Cambridgeshire are set out in Section 6 of the SPD, with the key issues summarised below:

- Plan in SuDS from the start
- Mimic natural drainage
- Use the SuDS management train
- Water reuse first
- Follow the drainage hierarchy
- Use infiltration where suitable
- Keep surface water on the surface
- Place-making through SuDS design, and landscape-led approach
- Recognise and conserve the historic and archaeological environment
- Minimise embodied carbon and waste in SuDS

- Design for wildlife and biodiversity
- Design for easy maintenance and access
- Design SuDS for brownfield sites
- Consider flood extents in SuDS design
- Design open spaces and streets to incorporate SuDS
- Design SuDS to match the density of developments
- Design SuDS for flat sites
- Design industrial and agricultural sites to incorporate SuDS

The SPD recommends that the consideration of SuDS be included in the preliminary stages of site design, providing the opportunity to incorporate SuDS features best suited to the area, and to consider the requirements for adoption and maintenance for the lifetime of the development.

The SuDS management train (**Figure 3-5**) is a central design concept for SuDS, and employs drainage techniques in series to reduce pollution, and control flow rates and volumes as water flows along the SUDS. Each part of the SUDS management train reduces the impact of the quantity of water leaving a development and improves the quality of water before release to the wider environment.

Figure 3-5: SuDS management train
Source: Anglian Water



- Land use decisions can remove flood risk and the associated need for SuDS.
- Source control includes features such as permeable paving, rainwater harvesting, living walls, rain gardens, filter strips, green roofs and bio retention areas which reduce the proportion of surface water runoff that is conveyed into the drainage system.
- Site control initiatives may include soakaways, ponds and wetlands, which work to slow the conveyance of water off the site and provide secondary stages of treatment.
- Regional controls are larger in scale (e.g. retention ponds, wetlands, infiltration basins) and may be implemented in large sites, or as part of catchment wide initiatives.
- Above ground conveyance systems such as swales and rills should be used wherever possible to convey water between SuDS components.

Cambridgeshire is one of the driest areas in England, so it is important that developments are designed to reuse water whenever possible. Recycled rainwater and surface water runoff can be used for non-potable purposes, such as toilet flushing and irrigation. Water can be collected for reuse from roofs and paved surfaces, and surface water runoff can be collected and treated using SuDS features before storing it for surrounding buildings to reuse.

The IDBs are responsible for water level management in their area, which can include the retention and reuse of water for irrigation during dry periods. Proposed development sites in IDB areas should be discussed with the relevant IDB as a development may provide the opportunity to improve water supply to the surrounding land.

The SPD goes into details of the particular considerations required for SuDS in the Fens, i.e. flat, artificially drained areas with high groundwater levels and low rainfall compared to the national average. In addition, the geology in central Cambridgeshire is relatively impermeable, consisting mainly of soils with properties

similar to clay which are not generally conducive to infiltration. Infiltration potential is very localised, but there can be suitable sites for infiltration SuDS even in the fen areas.

The British Geological Survey (BGS) have developed a tool that identifies areas where infiltration SuDS are likely to be appropriate (Ref. 71). Using this tool, an initial assessment has been carried out as to whether the proposed sites are suitable for implementation of an infiltration SuDS solution. This is shown in **Map O – Compatibility with Infiltration SuDS** and included in the Developer Guidance Sheets.

Geology can vary locally, so the suitability of infiltration SuDS for each proposed development must be assessed using site investigations. Where the underlying geology means that infiltration SuDS are not viable, attenuation SuDS can still be beneficial and should be actively considered.

The SPD also states that in areas with Internal Drainage Boards such as Fenland, there should be consultation with the relevant board to determine their preference or requirements for site drainage and to obtain permission to discharge into their system.

Adoption and maintenance of SuDS

The Cambridgeshire Flood and Surface Water SPD also provides guidance for adoption and maintenance of SuDS. It is recommended that a statutory organisation takes on the role of maintaining the SuDS, as this will guarantee ongoing maintenance of the drainage system. Where this is not possible, alternative bodies may also be able to maintain SuDS, provided that a suitable maintenance plan has been submitted to and agreed with the LPA. Statutory organisations in Cambridgeshire include the local authorities, Anglian Water and IDBs. For example, there is the opportunity for SuDS to be adopted by water companies under the sewer sector guidance/design and construction guidance.

3.6 Summary of Flood Risk and proposed strategy

The Fenland District Council area is at risk of flooding from two Main Rivers, the River Nene and the Great Ouse, as well as Internal Drainage Districts which depend on flood and water level management to manage the risk of flooding. This section provides the flood risk legislative and policy context as well as information on current and future flood risk to enable a sequential approach and Sequential Test to be made in siting new development.

Approximately 9,823 new dwellings are required by 2040 to meet the Council's growth targets. Of the 202 sites under consideration, 138 are located entirely within Flood Zone 1 – areas at lowest risk of flooding. These 138 sites could accommodate 11,055 dwellings, although not all of these sites are included in a single growth option. Growth Option 4 includes the greatest number of sites located within Flood Zone 1, with a potential capacity of 6,829. None of the Growth Options would enable Fenland District Council to achieve its growth target of 9,823 sites by 2040 with only those sites that are located in Flood Zone 1.

The remaining 64 sites are partly in Flood Zones 2 and 3, with 6.5% of the available area for these sites located outside Flood Zone 1. **Table 3-7** shows that Growth Option 2A has a higher proportion of potential development capacity located within Flood Zone 1, and the lowest proportion of potential development capacity within Flood Zone 3.

It will not be possible to meet the development requirements of the Local Plan with sites that are located only within Flood Zone 1. There are 31 sites located partly in Flood Zone 3 (high risk) which are proposed either for housing or mixed use (assumed to be part housing). These sites include some that were allocated in the previous Local Plan or which have already gained planning permission. The Sequential Test will need to be passed for the 25 sites to be allocated in the emerging Local Plan, although if there are no other reasonably available sites at lower risk of flooding, then these sites would pass the Sequential Test.

Following application of the Sequential Test, any allocated sites that are partly located in Flood Zone 3 and which include dwellings will require an Exception Test. More detailed assessment of flood risk and hazard is required from a Level 2 SFRA in order to better understand how flood risk to people and property can be managed satisfactorily for these sites.

As set out in Section 3.4.3, where development sites are allocated in areas at risk of flooding, then a detailed flood risk assessment will need to be carried out. The flood risk assessments will consider all sources of flooding which may include tidal, fluvial, ground water, drainage systems, reservoirs, canals or ordinary watercourses and demonstrate that the proposed development will be safe, not increase risk elsewhere and where possible will reduce flood risk overall.

SuDS should be utilised in the design of the development so that flood risk is not increased, whilst also seeking to reduce flood risk and improve natural habitats and ecology.

3.7 Recommendations for Level 2 SFRA

The scope for a level 2 SFRA is defined in guidance produced by Defra and the Environment Agency, “How to prepare a strategic flood risk assessment” (Ref. 64). This states that a Level 2 SFRA should “*be detailed enough for you to identify which development allocation sites have the least risk of flooding*”. They should support consistent and sustainable future planning decisions to be made. A Level 2 SFRA should include detailed mapping about the nature of flooding from all sources, considering the risks now and in the future.

Details should be included on:

- depth, velocity and speed of onset of flooding
- flood hazard
- duration of flooding
- sources of flood risk
- flood mechanism, for example breach or overtopping

It is recommended that a Level 2 SFRA is prepared which covers the following areas, focussing on the 25 sites included in the preferred Growth Options which are at high risk of flooding and which do not currently have a site specific flood risk assessment, as follows:

- Wisbech and adjacent villages (6 sites)
- March and Chatteris and adjacent villages (14 sites)
- Whittlesey (1 site)
- Guyhirn and Coldham (4 sites)

The Level 2 SFRA should build on the information included in this Level 1 SFRA by considering the residual risk to development sites from each source of flood risk, as listed below:

- Fluvial and Tidal flooding from Main Rivers (Rivers Welland, Great Ouse and Nene)
- Flooding from IDB systems, including both fluvial flooding and risk of overtopping, breach or failure of IDB flood management assets
- Coastal flood risk
- Surface Water (Piped Drainage and Land Drainage, Middle and North Level IDBs)
- Sewer
- Reservoirs
- Ground Water

Flooding occurs when the level or capacity of the current defences (embankments, pumps and storage) are exceeded or when an asset fails e.g. a pumping station failure or an embankment breach. These mechanisms are considered below for each source of flooding, in the context of the analysis that would need to be undertaken to inform the preparation of a Level 2 SFRA.

Fluvial and Tidal Flooding from Main Rivers

This is a significant source of flood risk for the district, although it is substantially mitigated by the extensive flood defences managed by the Environment Agency. The residual flood risk from these sources is mapped by the Environment Agency, shown by the defended and undefended flood map outlines. However, this analysis focuses on a limited number of flood event probabilities and climate change is not considered. A Level 2 SFRA should assess future flood risks, based on the latest climate change guidance.

The Environment Agency's fluvial and tidal flood models can be requested to inform preparation of a Level 2 SFRA, although it should be noted that they may be out of date or have issues with stability. Improving upon the Environment Agency's data to include additional probabilities of flooding and the impacts of climate change would require either the development of these models or building a new model.

The risk of failure of the fluvial and tidal flood defences presents a significant residual flood risk to the district. This residual risk could affect more people and properties than is indicated by the Flood Map for Planning, and as such this risk should be assessed in more detail by a Level 2 SFRA. Breach risk has been assessed by the Environment Agency and these models can be obtained to inform preparation of a Level 2 SFRA. The existing breach modelling is limited with regard to flood event and/or failure probabilities and climate change projections, and is very sensitive to the decisions made on the size and timing of any breaches. This sensitivity should be considered by a Level 2 SFRA.

The Level 2 SFRA should include a review of flood risk to Guyhirn, considering the assumptions made in terms of potential breach locations and flood compartment boundaries.

Internal Drainage Boards

Much of the district is actively drained by the IDBs and as such the drains are a very significant source of residual risk. The residual flood risk for the lowest lying parts of the catchment is well defined by the North Level IDB and Middle Level Commissioners.

The residual risk from failure of these drainage networks, for example due to a failed pump is also very important to define the residual risk. The North Level IDB are currently investigating this issue, with maps due to be produced in early 2022. Similar maps may be available from the Middle Level Commissioners. It should be noted that these models are limited as their extents only consider the individual IDB, with assumptions made at the boundaries and regarding the extent and duration of asset failures. The residual risk is sensitive to these assumptions.

It is recommended that the Level 2 SFRA reviews the IDB residual risk and asset failure maps (when available). Modelling could be undertaken to provide a simplified representation of the IDB drains and raised features, to allow the assessment of a range of scenarios including climate change, as well as enabling speed of onset of flooding and flood hazard to be assessed.

Coastal Flooding

Coastal flood risk to Fenland District is limited due to the distance from the coast, which means that the tidal rivers pose a more significant risk. The Flood Map for Planning shows the residual risk of coastal flooding, with the protection provided by the coastal defences represented as 'Areas Benefitting from Defences'. As for fluvial and tidal flooding, failure of the defences to the Wash could result in a much greater extent of flooding. However, the distance to the coast would still greatly reduce this risk. The extent of flooding from

a breach of the sea defences should be reviewed as part of a Level 2 SFRA, although this is not considered to be a significant risk to the district.

Surface Water Flooding

The Environment Agency Surface water flood maps provide a first estimate for the residual surface water flood risk. These maps don't take account of the actual capacity of the drainage systems and typically overestimate the extent of residual flood risk for piped drainage and underestimate it for open channel systems. Improving the assessment of the residual risk of flooding from surface water would require detailed models of the drainage networks including the piped systems.

Due to the high cost of such modelling, it is not currently recommended to be undertaken as part of a Level 2 SFRA. The Level 2 SFRA could review the historic surface water flood risk against the existing mapping and amend the probability of flooding as necessary to better represent the residual flood risk, with a focus on the preferred site allocations in the areas of greatest risk.

Sewer Flooding

Historic records of sewer flooding are available to identify where sewer flooding has previously occurred. Sewer flooding from foul drainage alone is not a major risk as Anglian Water actively manage and improve the system. Combined foul and surface water is a more significant risk but this is mostly covered by the surface water flood risk maps described above.

For the proposed Level 2 SFRA, modelling of the foul drainage system is not recommended due to high cost and potential issues with the quality of the asset information. The historic data should be reviewed, alongside consultation with Anglian Water regarding the residual risk, and consideration of the potential link to groundwater flood risk. The findings of this assessment would be mapped.

Reservoir Breach Risk

The extent of reservoir flood risk to the district is mapped by the Environment Agency, but information on hazard or speed of onset has not been provided. The ongoing update to the reservoir flood mapping may provide further information on this and should be reviewed when available as part of the preparation of the Level 2 SFRA.

If this information is not available from the Environment Agency, hazard and speed of onset could be assessed qualitatively. Alternatively, a land drainage model could include the reservoirs and be used to assess breach risk. This would allow breach locations to be adjusted to determine the worst cases for the district, as well as assessment of a wider range of scenarios and climate projections, to produce outputs including duration, hazard and speed of onset.

Groundwater Flooding

Groundwater is not a significant source of flood risk for the district, as groundwater levels are controlled by the drainage networks. There is a residual risk to property basements if they are not tanked, and an apparent link to sewer flood risk which should be considered. For the Level 2 SFRA, historic data, geology and topography could be assessed to produce a hazard map, although this would have limited accuracy.

Suitability for SuDS

The Level 2 SFRA should also include information about the suitability of the proposed sites for infiltration and attenuation SuDS.

4 ASSESSMENT OF THE PROPOSED DEVELOPMENT SITES

4.1 Summary of site assessment

An assessment has been completed of the suitability of all sites included in the Growth Options (refer to **Section 1**), based on the various assessments undertaken by this Level 1 SFRA and the associated Outline WCS. **Table 4-1** below provides a full list of the assessed sites and a summary of the status and capacity for each development.

Fenland District Council has undertaken an initial assessment of the suitability of all potential sites, based on a range of criteria considered by this report and the associated WCS, including flood risk and water and wastewater infrastructure capacity. Growth Option 2A and Employment Option 2A are currently the preferred growth options. Therefore, Developer Guidance Sheets have been provided as an Annex to this Report. For each of the preferred sites the Guidance Sheets present the following information:

- Site number/reference
- Site Name
- Site Status (e.g. existing allocated site, site with planning approval, new site, etc.)
- Proposed and Current Use: Housing, Employment or Mixed Use
- Site Area (ha)
- Capacity (number of dwellings)
- A summary table setting out the assessment of the site status for flood risk, water resources, water supply, wastewater collection capacity, wastewater treatment capacity, water quality and compatibility with infiltration SuDS.
- Flood risk for the site: assessment, mitigation measures in place and development vulnerability. Information regarding the need for a Sequential and Exception Test is provided based on Flood Zones only, although other sources of flooding would need to be considered in accordance with the NPPF. Includes a summary map, and whether a site-specific FRA is required.
- Water resources and supply: information obtained regarding availability of water resources for the proposed development. Includes a summary map.
- Wastewater collection, treatment and water quality: data obtained regarding WRC capacity, foul sewerage network capacity and WFD status of the waterbody to which the proposed development drains. It is important to note that Anglian Water cannot reserve capacity and the available capacity at the WRC can be reduced at any time due to growth and environmental and regulation driven changes. Includes a summary map.
- Biodiversity and conservation: information obtained regarding whether the proposed development is located within or nearby a conservation area. Includes a summary map.

Table 4-1 should be referred to when reviewing the Developer Guidance Sheets, as this provides a traffic light (red, amber green) assessment of the suitability of each site.

Explanatory key for Summary Table

Green - Low Risk	<ul style="list-style-type: none"> More than 98% of the site is within Flood Zone 1¹³. Surface water flood risk is low or very low with less than 1% annual probability of flooding from excessive rainfall. There is limited or no potential for groundwater flooding to occur at the site. The site passes the Sequential Test. A site-specific flood risk assessment should be produced for all sites larger than 1ha. Water resources, water supply, wastewater collection and wastewater treatment capacity – capacity available to serve the proposed growth. Water quality of receiving water bodies – Good (WFD current overall status, 2019) SuDS¹⁴ – compatible for infiltration and attenuation SuDS.
Amber - Medium Risk	<ul style="list-style-type: none"> Site is not fully within Flood Zone 1 but has 10% or less of its area in Flood Zone 3, <u>AND/OR</u> surface water flood risk has an annual probability of between 1% and 3.33%, <u>AND/OR</u> there is a high risk of groundwater flooding occurring at the site, <u>AND/OR</u> there is a high risk of sewer flooding at the site. Further understanding of the impact of flood defences, the influence of climate change on flood risk and surface water flood risk will be required for the site to be taken forward for allocation. A site-specific flood risk assessment should be produced. Water resources, water supply, wastewater collection and wastewater treatment capacity – Infrastructure and/or treatment upgrades required to serve proposed growth, or diversion of assets may be required. Water quality of receiving water bodies – Moderate (WFD current overall status, 2019) SuDS – Site with opportunities for bespoke infiltration SuDS and attenuation SuDS.
Red - High Risk	<ul style="list-style-type: none"> Sites with more than 10% of their area in Flood Zone 3, which may need to pass the Exception Test. <u>AND/OR</u> surface water flood risk has an annual probability of more than 3.33%. Further understanding of the impact of flood defences, the influence of climate change on flood risk and surface water flood risk will be required for the site to be taken forward for allocation. A site-specific flood risk assessment should be produced. Water resources, water supply, wastewater collection, wastewater treatment capacity – Major Constraints to Provision of infrastructure and/or treatment to serve proposed growth. Water quality of receiving water bodies – Bad or Moderate to Bad (WFD current overall status, 2019), <u>AND/OR</u> Site will increase the population of a WRC area by >5%. SuDS – Site with significant constraints for infiltration SuDS. There may be opportunities for attenuation SuDS.

¹³ Refer to Appendix B for definition of Flood Zones.

¹⁴ Whilst constraints on infiltration SuDS may be indicated in the table below, it is recognised that large parts of the district are suitably compatible for attenuation SuDS.

Table 4-1: Status and capacity of potential sites in emerging Local Plan
 (Source – Fenland District Council, Environment Agency, British Geological Society)

Note: If sites in Flood Zone 3 are defined as ‘Low’ Flood Risk Suitability, this is because less than 10% of the site area is within Flood Zone 3. If sites in Flood Zone 1 are defined as ‘High’ Flood Risk Suitability, this is due to surface water flooding risks (SW reference included). If sites in Flood Zone 1 are defined as ‘Medium’ Flood Risk Suitability, this is due to groundwater or sewer flooding risks (GW/S references included). Refer to **Table 3-8**, Outline WCS and Site Guidance Sheets.

Site Ref.	Growth Option								Location	Proposed Use	Local Plan Capacity	Flood Zone	Surface Water Flood Risk	Flood Risk Suitability	Water Resources & Supply	Wastewater collection	Wastewater Treatment	Water Quality	Infiltration SuDS Compatible
	1	2	2A	3	4	E1	E2	E2A											
40001		✓		✓	✓				Wisbech	Allocated	950	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40002							✓	✓	Wisbech	Allocated	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40004							✓	✓	Wisbech	Allocated	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40005		✓		✓	✓				March	Allocated	750	3	Low	Medium	Medium	Medium	>20%	High	Constraints
40007		✓		✓	✓				March	Allocated	1500	3	Medium	Medium	Medium	Medium	>20%	High	Bespoke
40008							✓	✓	March	Allocated	0	3	Medium	High	Medium	Low	>20%	Medium	Constraints
40012		✓	✓	✓	✓				Whittlesey	Allocated	452	1	Low	Medium (GW)	Medium	Medium	<20%	High	Bespoke
40017	✓	✓	✓	✓	✓				Wisbech	Approved	11	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40020	✓	✓	✓	✓	✓				March	Approved	14	3	High	High	Medium	Medium	>20%	Medium	Constraints
40022	✓	✓	✓	✓	✓				Wisbech	Approved	10	1	High	High (SW)	Medium	Low	>20%	Medium	Bespoke
40025	✓	✓	✓	✓	✓				Wisbech	Approved	149	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40028	✓	✓	✓	✓	✓				Christchurch	Approved	9	1	Low	Low	Medium	Low	>40%	High	Bespoke
40031	✓	✓	✓	✓	✓				March	Approved	24	1	High	High (SW)	Medium	Medium	>20%	Medium	Constraints
40033	✓	✓	✓	✓	✓				Eastrea	Approved	6	1	Low	Low	Medium	Low	<20%	Medium	Bespoke
40036	✓	✓	✓	✓	✓				March	Approved	12	3	Medium	High	Medium	Medium	>20%	Medium	Bespoke
40037	✓	✓	✓	✓	✓				March	Approved	18	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40038	✓	✓	✓	✓	✓				Manea	Approved	32	1	Low	Low	Medium	Medium	Exceeding	Medium	Bespoke
40041	✓	✓	✓	✓	✓				March	Approved	28	1	Low	Medium (S/GW)	Medium	Medium	>20%	Medium	Constraints
40042	✓	✓	✓	✓	✓				Whittlesey	Approved	220	3	Low	High	Medium	Medium	<20%	Medium	Constraints
40043	✓	✓	✓	✓	✓				March	Approved	7	1	Low	Medium (S)	Medium	Low	>20%	Medium	Bespoke
40045	✓	✓	✓	✓	✓				Wisbech St Mary	Approved	76	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40048	✓	✓	✓	✓	✓				Manea	Approved	29	2	Low	Medium	Medium	Medium	Exceeding	Medium	Bespoke
40050	✓	✓	✓	✓	✓				March	Approved	34	1	High	High (SW)	Medium	Medium	>20%	Medium	Constraints
40052	✓	✓	✓	✓	✓				March	Approved	9	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40053	✓	✓	✓	✓	✓				Elm	Approved	50	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40054	✓	✓	✓	✓	✓				Chatteris	Approved	5	1	Low	Low	Medium	Low	>40%	Medium	Bespoke
40056	✓	✓	✓	✓	✓				Wisbech	Approved	137	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40057	✓	✓	✓	✓	✓				Chatteris	Approved	50	1	Low	Medium (GW)	Medium	Medium	>40%	Medium	Bespoke
40059	✓	✓	✓	✓	✓				Christchurch	Approved	16	1	Low	Low	Medium	Medium	>40%	High	Bespoke

Site Ref.	Growth Option								Location	Proposed Use	Local Plan Capacity	Flood Zone	Surface Water Flood Risk	Flood Risk Suitability	Water Resources & Supply	Wastewater collection	Wastewater Treatment	Water Quality	Infiltration SuDS Compatible
	1	2	2A	3	4	E1	E2	E2A											
40060	✓	✓	✓	✓	✓				Wimblington	Approved	5	1	Low	Medium (GW)	Medium	Low	<20%	Medium	Constraints
40067	✓	✓	✓	✓	✓				Leverington	Approved	220	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40070	✓	✓	✓	✓	✓				Coates	Approved	60	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40072			✓						Chatteris	Approved	58	3	Low	High	Medium	Medium	>40%	Medium	Bespoke
40073	✓	✓	✓	✓	✓				March	Approved	19	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Constraints
40074	✓	✓	✓	✓	✓				Wimblington	Approved	25	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40076	✓	✓	✓	✓	✓				Manea	Approved	13	1	Low	Medium (GW)	Medium	Medium	Exceeding	Medium	Constraints
40077	✓	✓	✓	✓	✓				March	Approved	118	3	Low	High	Medium	Medium	>20%	Medium	Constraints
40079	✓	✓	✓	✓	✓				Doddington	Approved	13	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Constraints
40082	✓	✓	✓	✓	✓				March	Approved	13	1	Low	Medium (S)	Medium	Medium	>20%	Medium	Bespoke
40083	✓	✓	✓	✓	✓				Elm	Approved	5	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40087	✓	✓	✓	✓	✓				Wimblington	Approved	7	1	Low	Medium (GW)	Medium	Low	<20%	Medium	Constraints
40093	✓	✓	✓	✓	✓				March	Approved	9	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Constraints
40103			✓						Wisbech St Mary	New site	90	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40104R			✓						Gorefield	New site	30	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40105		✓	✓	✓	✓				March	New site	9	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Constraints
40115			✓						March	New site	55	1	Low	Medium (GW)	Medium	Medium	>20%	Medium	Constraints
40117					✓				Eastrea	New site	147	3	Low	Medium	Medium	Medium	<20%	Medium	Bespoke
40126R			✓						March	New site	24	2	Low	Medium	Medium	Medium	>20%	Medium	Constraints
40127		✓	✓	✓	✓				Friday Bridge	New site	6	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40133		✓	✓	✓	✓				Leverington	New site	96	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40135			✓	✓	✓				Coldham	New site	11	2	Low	Medium	Medium	Medium	>20%	Medium	Bespoke
40137			✓						Collet's Bridge	New site	10	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40139				✓	✓				Doddington	New site	53	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40140R			✓	✓	✓				Doddington	New site	155	3	Low	High	Medium	Medium	<20%	High	Bespoke
40143			✓	✓	✓				Doddington	New site	17	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40145					✓				Eastrea	New site	109	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40147			✓						Guyhirn	New site	15	3	Low	Medium (GW)	Medium	Medium	>20%	Medium	Constraints
40150		✓	✓	✓	✓				Murrow	New site	7	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Constraints
40151				✓	✓				Wimblington	New site	77	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40152		✓	✓	✓	✓				Wimblington	New site	46	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40158			✓						Wisbech	New site	10	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40163		✓	✓	✓	✓				Wisbech	New site	77	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40171			✓						Wisbech St Mary	New site	51	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40173			✓	✓	✓				Doddington	New site	10	1	Low	Medium (GW)	Medium	Low	<20%	Medium	Bespoke

Site Ref.	Growth Option								Location	Proposed Use	Local Plan Capacity	Flood Zone	Surface Water Flood Risk	Flood Risk Suitability	Water Resources & Supply	Wastewater collection	Wastewater Treatment	Water Quality	Infiltration SuDS Compatible
	1	2	2A	3	4	E1	E2	E2A											
40185			✓	✓	✓				Manea	New site	10	1	Low	Medium (GW)	Medium	Low	Exceeding	Medium	Bespoke
40190		✓	✓						March	New site	98	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Constraints
40194			✓						March	New site	8	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40198	✓	✓	✓	✓	✓				Coates	New site	20	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40207R			✓	✓	✓				Guyhirn	New site	5	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40211R			✓						Chatteris	New site	100	1	Low	Low	Medium	Medium	>40%	Medium	Bespoke
40215					✓				Wimblington	New site	50	1	Medium	Medium (SW)	Medium	Medium	<20%	Medium	Constraints
40217					✓				Wimblington	New site	66	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40223			✓	✓	✓				Manea	New site	105	1	Low	Low	Medium	Medium	Exceeding	High	Bespoke
40229					✓				Wimblington	New site	9	1	Low	Low	Medium	Low	<20%	Medium	Bespoke
40233					✓				Eastrea	New site	177	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40235			✓						Doddington	New site	31	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40237		✓							Whittlesey	New site	584	1	Low	Medium (GW)	Medium	Medium	<20%	High	Constraints
40241R			✓						Rings End	New site	8	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40250				✓	✓				Benwick	New site	31	3	Low	High	Medium	Medium	>40%	High	Constraints
40252		✓	✓	✓	✓				March	New site	294	1	Low	Medium (GW)	Medium	Medium	>20%	Medium	Constraints
40258					✓				Eastrea	New site	233	3	Low	Medium	Medium	Medium	<20%	Medium	Bespoke
40259				✓	✓				Eastrea	New site	107	3	Low	Medium	Medium	Medium	<20%	Medium	Bespoke
40262		✓	✓	✓	✓				March	New site	55	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Bespoke
40263		✓	✓	✓	✓				March	New site	19	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Constraints
40264		✓	✓	✓	✓				March	New site	50	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Constraints
40265			✓						Coates	New site	232	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40270						✓	✓		Whittlesey	New site	0	3	Low	High	Medium	Low	<20%	Medium	Bespoke
40274				✓	✓				Benwick	New site	6	3	Low	High	Medium	Low	>40%	Medium	Bespoke
40276							✓		March	New site	0	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Constraints
40278			✓		✓				Wimblington	New site	97	1	Low	Medium (GW)	Medium	Medium	<20%	High	Constraints
40284		✓							Chatteris	New site	260	1	Low	Medium (GW)	Medium	Medium	>40%	High	Bespoke
40285			✓						March	New site	1200	3	Low	Medium	Medium	Medium	>20%	High	Bespoke
40286							✓		March	New site	0	3	Low	High	Medium	Low	>20%	Medium	Constraints
40288		✓	✓	✓	✓				Chatteris	New site	20	3	Low	High	Medium	Medium	>40%	Medium	Bespoke
40290						✓	✓		March	New site	0	3	High	High	Medium	Low	>20%	Medium	Bespoke
40300		✓	✓	✓	✓				Whittlesey	New site	156	1	Low	Medium	Medium	Medium	<20%	Medium	Bespoke
40302		✓	✓	✓	✓				Parson Drove	New site	8	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40303			✓	✓	✓				Guyhirn	New site	15	3	Low	High	Medium	Medium	>20%	Medium	Constraints
40305			✓	✓	✓				Friday Bridge	New site	87	2	Low	Medium	Medium	Medium	>20%	Medium	Bespoke

Site Ref.	Growth Option								Location	Proposed Use	Local Plan Capacity	Flood Zone	Surface Water Flood Risk	Flood Risk Suitability	Water Resources & Supply	Wastewater collection	Wastewater Treatment	Water Quality	Infiltration SuDS Compatible
	1	2	2A	3	4	E1	E2	E2A											
40307R			✓						Wisbech St Mary	New site	10	1	Low	Medium	Medium	Low	>20%	Medium	Constraints
40315		✓	✓	✓	✓				March	New site	19	1	Medium	Medium (SW)	Medium	Medium	>20%	Medium	Constraints
40316		✓	✓	✓	✓				March	New site	6	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Constraints
40319			✓	✓	✓				Friday Bridge	New site	137	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40321							✓	✓	Coates	New site	0	3	Low	Medium	Medium	Low	<20%	Medium	Bespoke
40325		✓	✓	✓	✓				Chatteris	New site	6	1	Low	Low	Medium	Low	>40%	Medium	Bespoke
40326		✓	✓	✓	✓				Chatteris	New site	90	1	Medium	Medium (SW)	Medium	Medium	>40%	Medium	Bespoke
40327							✓	✓	Chatteris	New site	0	3	Low	High	Medium	Low	>40%	Medium	Bespoke
40328			✓						Coates	New site	117	3	Low	Medium	Medium	Medium	<20%	Medium	Constraints
40335		✓	✓	✓	✓				Whittlesey	New site	11	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40337		✓	✓	✓	✓				Wisbech	New site	10	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40338		✓	✓	✓	✓				Wisbech	New site	178	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40348		✓							Whittlesey	New site	179	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40351								✓	Countryside	New site	0	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Bespoke
40364R			✓						Tydd St Giles	New site	12	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40366		✓	✓	✓	✓				Wisbech	New site	21	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40367		✓	✓	✓	✓				Chatteris	New site	248	1	Low	Medium (GW)	Medium	Medium	>40%	High	Bespoke
40368			✓	✓	✓				Newton	New site	6	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40369R			✓						Christchurch	New site	10	1	Low	Low	Medium	Low	>40%	High	Bespoke
40371		✓	✓	✓	✓				Wisbech	New site	316	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40372					✓				Eastrea	New site	144	3	Low	Medium	Medium	Medium	<20%	Medium	Bespoke
40374					✓				Wimblington	New site	33	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Bespoke
40375				✓	✓				Benwick	New site	20	3	Low	High	Medium	Medium	>40%	High	Constraints
40376					✓				Eastrea	New site	75	3	Low	Medium	Medium	Medium	<20%	Medium	Bespoke
40380				✓	✓				Wimblington	New site	34	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40382		✓	✓	✓	✓				March	New site	341	1	High	High (SW)	Medium	Medium	>20%	Medium	Constraints
40384		✓	✓	✓	✓				Chatteris	New site	1000	1	Low	Medium (GW)	Medium	Medium	>40%	High	Bespoke
40386						✓	✓	✓	March	Approved	0	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Bespoke
40390						✓			March	Approved	0	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Constraints
40393						✓			March	Approved	0	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Bespoke
40398						✓	✓	✓	Wisbech	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40402						✓	✓	✓	Wisbech	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40403						✓	✓	✓	Chatteris	Approved	0	1	Low	Low	Medium	Low	>40%	Medium	Bespoke
40404						✓			March	Approved	0	1	Low	Medium (GW)	Medium	Low	>20%	Medium	Bespoke
40408						✓	✓	✓	Chatteris	Approved	0	3	Low	High	Medium	Low	>40%	Medium	Bespoke

Site Ref.	Growth Option								Location	Proposed Use	Local Plan Capacity	Flood Zone	Surface Water Flood Risk	Flood Risk Suitability	Water Resources & Supply	Wastewater collection	Wastewater Treatment	Water Quality	Infiltration SuDS Compatible
	1	2	2A	3	4	E1	E2	E2A											
40409						✓	✓	✓	Chatteris	Approved	0	1	Low	Low	Medium	Low	>40%	Medium	Bespoke
40411						✓			March	Approved	0	1	High	High (SW)	Medium	Low	>20%	Medium	Constraints
40412						✓			Wisbech	Approved	0	2	Low	High	Medium	Low	>20%	Medium	Bespoke
40415						✓	✓	✓	Wisbech	Approved	0	2	Low	High	Medium	Low	>20%	Medium	Bespoke
40416						✓			Chatteris	Approved	0	2	Low	Medium	Medium	Low	>40%	Medium	Bespoke
40417						✓	✓	✓	Whittlesey	Approved	0	1	Low	Medium (GW)	Medium	Low	<20%	Medium	Constraints
40420						✓	✓	✓	March	Approved	0	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Constraints
40424R			✓						Wisbech St Mary	New site	9	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40426		✓	✓	✓	✓				Doddington	New site	55	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40427			✓						Doddington	New site	40	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Constraints
40430			✓						March	New site	62	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40434		✓	✓	✓	✓				March	New site	9	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Constraints
40443		✓		✓	✓				Whittlesey	Approved	53	2	Low	High	Medium	Medium	<20%	Medium	Bespoke
40444			✓						Doddington	New site	13	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Constraints
40446		✓	✓	✓	✓				March	New site	18	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Constraints
40447		✓	✓	✓	✓				Chatteris	New site	53	2	Low	High	Medium	Medium	>40%	Medium	Bespoke
40450				✓	✓				Doddington	New site	100	1	Low	Low	Medium	Medium	<20%	High	Bespoke
40451R			✓						Parson Drove	New site	30	1	Low	Medium (GW)	Medium	Medium	>20%	High	Constraints
40453				✓	✓				Doddington	New site	11	1	Low	Low	Medium	Medium	<20%	Medium	Bespoke
40454								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40455								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40456								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Constraints
40457								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40458							✓	✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40459								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40463		✓	✓	✓	✓				Christchurch	New site	23	1	Low	Low	Medium	Medium	>40%	High	Bespoke
40468							✓	✓	Countryside	New site	0	2	Low	High	Medium	Low	>20%	Medium	Bespoke
40469								✓	Countryside	New site	0	2	Low	High	Medium	Low	>20%	Medium	Bespoke
40491								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40496					✓				Wimblington	New site	11	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Constraints
40497								✓	Chatteris	New site	0	2	Low	High	Medium	Low	>40%	Medium	Bespoke
40499		✓	✓	✓	✓				Chatteris	New site	52	1	Low	Medium (GW)	Medium	Medium	>40%	Medium	Constraints
40502								✓	Whittlesey	New site	0	1	Low	Low	Medium	Low	<20%	Medium	Bespoke
40503	✓	✓	✓	✓	✓				Leverington	Approved	9	2	Low	Medium	Medium	Low	>20%	Medium	Bespoke
40504	✓	✓	✓	✓	✓				Parson Drove	Approved	5	2	Low	High	Medium	Low	>20%	Medium	Bespoke

Site Ref.	Growth Option								Location	Proposed Use	Local Plan Capacity	Flood Zone	Surface Water Flood Risk	Flood Risk Suitability	Water Resources & Supply	Wastewater collection	Wastewater Treatment	Water Quality	Infiltration SuDS Compatible
	1	2	2A	3	4	E1	E2	E2A											
40505	✓	✓	✓	✓	✓				Chatteris	Approved	7	1	Low	Low	Medium	Low	>40%	Medium	Bespoke
40506	✓	✓	✓	✓	✓				Wisbech	Approved	15	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40509	✓	✓	✓	✓	✓				Wisbech	Approved	9	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40511	✓	✓	✓	✓	✓				March	Approved	5	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Constraints
40513	✓	✓	✓	✓	✓				Wisbech	Approved	19	3	Low	High	Medium	Medium	>20%	Medium	Bespoke
40514	✓	✓	✓	✓	✓				Gorefield	Approved	5	2	Low	Medium	Medium	Low	>20%	Medium	Bespoke
40517	✓	✓	✓	✓	✓				March	New site	26	1	Low	Medium (GW/S)	Medium	Medium	>20%	Medium	Bespoke
40518	✓	✓	✓	✓	✓				Wisbech St Mary	Approved	5	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40519	✓	✓	✓	✓	✓				Chatteris	Approved	9	1	Low	Low	Medium	Low	>40%	Medium	Bespoke
40520	✓	✓	✓	✓	✓				Countryside	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40521	✓	✓	✓	✓	✓				Gorefield	Approved	14	3	Low	Medium	Medium	Medium	>20%	Medium	Bespoke
40522	✓	✓	✓	✓	✓				Manea	Approved	5	1	Low	Low	Medium	Low	Exceeding	Medium	Bespoke
40523	✓	✓	✓	✓	✓				March	Approved	9	1	Low	Medium (GW/S)	Medium	Low	>20%	Medium	Constraints
40524	✓	✓	✓	✓	✓				March	Approved	9	1	High	High (SW)	Medium	Low	>20%	Medium	Constraints
40525	✓	✓	✓	✓	✓				March	Approved	40	1	High	High (SW)	Medium	Medium	>20%	Medium	Constraints
40526	✓	✓	✓	✓	✓				Whittlesey	Approved	18	3	Low	High	Medium	Medium	<20%	Medium	Bespoke
40527	✓	✓	✓	✓	✓				Whittlesey	Approved	9	1	Low	Low	Medium	Low	<20%	Medium	Bespoke
40528	✓	✓	✓	✓	✓				Whittlesey	Approved	9	1	Low	Low	Medium	Low	<20%	Medium	Bespoke
40529	✓	✓	✓	✓	✓				Wimblington	Approved	30	1	Low	Medium (GW)	Medium	Medium	<20%	Medium	Constraints
40530	✓	✓	✓	✓	✓				Wisbech	Approved	9	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40531	✓	✓	✓	✓	✓				Wisbech St Mary	Approved	6	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40532						✓	✓	✓	Whittlesey	Approved	0	1	Low	Medium (GW)	Medium	Low	<20%	Medium	Bespoke
40533						✓	✓	✓	Countryside	Approved	0	1	Low	Low	Medium	Low	>20%	Medium	Bespoke
40534						✓	✓	✓	Wisbech	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40535						✓	✓	✓	March	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40536						✓	✓	✓	Wisbech	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40537						✓	✓	✓	Wisbech	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40538						✓	✓	✓	Wisbech	Approved	0	3	High	High	Medium	Low	>20%	Medium	Bespoke
40539						✓	✓	✓	Chatteris	Approved	0	3	Low	High	Medium	Low	>40%	Medium	Bespoke
40540						✓	✓	✓	March	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40541						✓	✓	✓	March	Approved	0	3	Low	High	Medium	Low	>20%	Medium	Bespoke
40322/ 40306R			✓						Elm	New site	215	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke
40373/ 40498R			✓						Leverington	New site	100	1	Low	Low	Medium	Medium	>20%	Medium	Bespoke

5 SUMMARY OF LEVEL 1 SFRA OUTCOMES

5.1 Conclusions

This section summarises the main conclusions from the Level 1 SFRA. The assessments supporting the conclusions are provided in Section 3 of this report.

Development in Fenland District

- The emerging Local Plan (2020-2040) requires that approximately 9,823 new homes (average 517 per year) be built to satisfy the growth ambitions of the Council's Local Housing Need (LHN), based on the October 2021 assessment. The methodology used to calculate these numbers is based on the PPG's Housing Need Assessment.
- Growth Options have been developed to support different approaches to growth across the district to achieve the housing and employment development requirements of the emerging Local Plan.
- Permission has already been granted for 3,088 dwellings. As a result, the Local Plan will need to provide allocation for at least a further 6,735 new dwellings.

Flood Risk

- Fenland is susceptible to fluvial flooding; it falls within two main river catchments: River Nene, and the Great Ouse. There are historical records of the River Nene and the Great Ouse causing flooding incidents in Fenland, particularly in Wisbech.
- Fenland is not at risk of flooding directly from the sea (coastal flooding), but it is at risk from tidal flooding from the River Nene. To combat the tidal flood risk in Fenland there are flood defences along the tidal Nene to protect against at least a 0.5% AEP flood. This protection directly benefits towns such as Wisbech that have a history of flooding induced by storm surges.
- Fenland is susceptible to flooding from surface water runoff after heavy rainfall. Surface water flooding is generally caused by very intense rainfall which results in water ponding or flowing over the ground surface before entering surface water sewers and other local drainage networks, or when water cannot enter the drainage network due to insufficient capacity.
- Large parts of the district are close to or below sea level. To prevent large areas from flooding due to an accumulation of rainwater, surface water is actively managed via ditches and the IDB networks.
- It is quite common for parts of Fenland to experience small scale flooding of highways, footpaths and private gardens from surface water runoff. There are also historical records of sewer flooding in the district.
- Based on the Environment Agency Catchment Flood Management Plans, Fenland does not have significant groundwater flooding susceptibility. Some parts of Fenland are more susceptible to groundwater flooding at the surface due to the local geology, where Diamicton (March) or Clay, Silt and Sand (Whittlesey) superficial deposits exist. However, there are no reported incidences of groundwater flooding.
- Large areas of Fenland district are at risk of being flooded from large raised reservoirs (**Map M**). This risk relates to the flood storage reservoirs of the Nene Washes and the Ouse Washes, which are not permanently full of water. Considering the provisions of The Reservoirs Act and the recent significant investment in the maintenance and improvement of the barrier banks to the washes, there is a low likelihood that reservoir flooding will occur in Fenland.
- A variety of flood risk management structures are located within Fenland. The Environment Agency has the responsibility for looking after the formal defences on designated Main Rivers, notably the

defences along the tidal River Nene. The North Level IDB and the Middle Level Commissioners' manage structures located within the catchments of their Internal Drainage Board districts (**Map P**). Fenland District Council owns and maintains a number of surface water and fluvial flood risk management assets.

- The use of SuDS should be prioritised on all new developments to provide multiple benefits such as flood risk reduction and improvements to water quality, amenity and biodiversity. Although infiltration SuDS may not be technically feasible for some developments within Fenland due to the high groundwater levels, attenuation SuDS may be possible.
- New development should be steered towards areas with the lowest risk of flooding following the Sequential Approach throughout the planning process.
- In accordance with the National Planning Policy Framework (NPPF), a sequential approach has been applied and the potential sites have been reviewed against the Flood Map. From a total of 202 sites, identified by the Council as part of the Growth Options and reviewed as part of this study, 138 sites are located entirely within Flood Zone 1. These 138 sites could accommodate 11,055 dwellings, although not all of these sites are included in a single growth option. Of the remaining 64 sites that are located partly in Flood Zones 2 and 3, 6.5% of the available area is outside Flood Zone 1. Dwellings are proposed for 41 of the sites in Flood Zones 2 and 3, with 31 sites (25 new sites) located partly within Flood Zone 3 (high risk). The Exception Test would need to be passed for these sites.
- With the proposed growth options it will not be possible to meet all the development requirements of the Local Plan with sites that are located within Flood Zone 1. For sites not located within Flood Zone 1, an Exception Test supported by further information from a more detailed Level 2 SFRA will be required to underpin further decisions on site allocation.
- A comparison of the Growth Options shows that Growth Option 2A has a higher proportion of potential sites located within Flood Zone 1, and a lower proportion of potential sites within Flood Zone 3.

5.2 Recommendations

The ongoing support and cooperation of the key stakeholders and responsible parties is required for the full range of water services infrastructure requirements, policy recommendations and additional guidance to be effective in supporting sustainable growth. Key stakeholders and responsible parties must take an active role in influencing the implementation of key water services infrastructure solutions and recommendations from this SFRA, the associated Water Cycle Study and other strategies to support and benefit Fenland's growth plans.

Fenland District Council

1. Fenland District Council (the Council) should use the outcome of this report to support further sequential testing as required to ensure its proposed housing and other development allocations appropriately consider flood risk.
2. The Council should prepare more detailed flood risk information, in the form of a Level 2 SFRA, focussing on the 25 preferred sites that are located in areas of higher flood risk:
 - Wisbech and adjacent villages (6 sites)
 - March and Chatteris and adjacent villages (14 sites)
 - Whittlesey (1 site)
 - Guyhirn and Coldham (4 sites)

Further details of the recommendations for the scope of a Level 2 SFRA are included in Section 3.7.

3. The Council should use their role as Local Planning Authority to engage in effective partnership with Cambridgeshire County Council (as LLFA) and Anglian Water to ensure effective Sustainable Drainage Systems are delivered as part of the planning approval process. SuDS can mitigate flood risk and negative environmental impacts of development, as well as reducing demand on wastewater collection infrastructure. Therefore, SuDS and are the preferred option for surface water drainage.
4. The Council should highlight the opportunities and encourage the adoption of flood resilient designs and construction materials to developers.
5. Recommendations for policy to be included in the Local Plan are set out in **Section 5.3**.

Cambridgeshire County Council

1. Cambridgeshire County Council should use its role as LLFA to ensure effective Sustainable Drainage Systems are delivered as part of the planning approval process.

Anglian Water

1. Anglian Water should continue to take a proactive role providing advice to the Council for development planning purposes, including in relation to the provision, maintenance and adoption of SuDS and other water management systems within new developments.

Developers

1. Developers should use information provided in this document, and in particular the development guidance sheets to support the planning and site-specific Flood Risk Assessment (FRA) for new developments. FRAs should incorporate all relevant points included in the *Site-Specific Flood Risk Assessment: CHECKLIST* that appears in the NPPG (Ref. 28) and the Cambridgeshire Flood and Water SPD.
2. Developers should seek to implement measures which minimise the impact of the proposed development on flood risk and explore ways in which the development may enhance water quality and amenity, e.g. by including green and/or blue infrastructure, such as SuDS measures. CIRIA's SuDS Manual (Ref. 41) provide further information on SuDS types.

5.3 Policy Recommendations

The following policy recommendations should be considered by Fenland District Council in the development of the Local Plan:

- **Sequential approach to development**

It is recommended that the sequential approach is adopted for all future developments within Fenland District. New development and re-development of land should wherever possible seek opportunities to reduce the overall level of flood risk at a site and elsewhere.

- **Sequential and Exception tests**

The SFRA has identified that much of Fenland District is at high risk of flooding from tidal, fluvial and surface water sources. Proposed development sites will need to satisfy the Sequential Test, in accordance with the NPPF. Sites located in areas at risk of flooding will also need to pass the Exception Test. Fenland District Council should use the information in this SFRA to inform decisions on which development sites to take forward in their Local Plan.

- **Site-specific Flood Risk Assessments**

For developments that cannot be located in Flood Zone 1, more detailed assessment is needed to verify flood extent to inform the sequential approach within the site and demonstrate (where necessary) if the Sequential and Exception Tests are satisfied. The latest climate change allowances should be taken into

account. Residual risk (overtopping, breach and pump failure), and the impact on floodplain storage must be considered.

- **Surface water management and SuDS**

Developers should consult the Cambridgeshire Flood and Water SPD (Ref. 46), which provides guidance on the approach that should be taken to design new developments to manage and mitigate flood risk and include sustainable drainage systems (SuDS). Fenland District Council should monitor the application of SuDS to developments in areas at risk of flooding.

- **Water resources and supply**

New development and re-development of land should wherever possible seek opportunities to implement water efficiency, water storage and water recycling measures, which can have benefits in terms of reducing flood risk. Fenland District Council should monitor the application of such measures.

- **Flood resistance and resilience**

Resistance and resilience measures will be required if buildings are situated in the flood risk area. Developments should comply with the Environment Agency's guidance on finished floor levels. Safe access and egress to a locally identified refuge area will need to be demonstrated at all development sites. Flood warning and evacuation plans should be prepared for those areas known to be at risk of flooding.

- **Water Framework Directive**

Development that may adversely affect green infrastructure assets and water quality should not be permitted. Developments should demonstrate opportunities to create and enhance green infrastructure, which can have benefits in terms of reducing flood risk and improving water quality.

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MAPS

DEVELOPER GUIDANCE SHEETS

Appendix A

Data Sources

Abbreviations

FDC	Fenland District Council
EA	Environment Agency
CCC	Cambridgeshire County Council (as Lead Local Flood Authority)

Type of Information	Description	Data Source
OS Mapping	Ordnance Survey 1:10k, 1:25k, 1:50k. 1:250k and Mastermap Maps	FDC
Water Cycle Strategy	Report	FDC
Strategic Flood Risk Assessment	Reports, modelling and GIS files	FDC
Surface Water Management Plan	Report	FDC
Flood Areas	<ul style="list-style-type: none"> Flood Alert Areas Flood Map - Areas Benefiting from Flood Defences Flood Map - Flood Storage Areas Flood Map - Flood Zone 2 and Flood Zone 3 Flood Map - Spatial Flood Defences (without standardised attributes) Flood Risk Areas Groundwater Vulnerability Recorded Flood Outlines Risk of Flooding from Rivers and Sea (Detailed) - Properties in Areas Flood Map for Surface Water (RoSWF) Complex Flood Warning Zones Tidal Hazard Mapping (River Nene) 	EA Geostore
Historic Flood Map	GIS Files	EA
Historic Flood Incident Records	Flooding from all sources in Fenland 2012-2020	CCC
BGS Infiltration SuDS	<ul style="list-style-type: none"> Drainage Summary Ground Stability Summary Ground Water Protection Summary Infiltration Constraints Summary Infiltration SuDS Map Summary 	FDC
Environmental Designations	<ul style="list-style-type: none"> Local Nature Reserves Conservation Areas Special Protection Area Listed Buildings Scheduled Monuments Sites of Special Scientific Interest 	FDC / EA Geostore
Watercourses	Detailed River Network	EA Geostore
Internal Drainage Board catchments	Boundaries, drains, catchments, inspection chambers, pipes, pumping stations, raised embankments, slackers, weirs and water retention structures	Middle Level / North Level IDBs
Water Framework Directory	All	EA Geostore

Type of Information	Description	Data Source
National Receptor Dataset 2014	All	EA Geostore
Preliminary list of preferred sites		FDC
Catchment Flood Management Plan	Report	EA
2019 Water Resource Management Plan	With information on Water Resource Zones and Planning Zones	Anglian Water
2018 Water Recycling Long-term Plan		Anglian Water
Copy of DG5 Flooding Records - Fenland District	Wastewater Flooding Incident Locations 2014-2017	Anglian Water
Planned infrastructure improvement works	<ul style="list-style-type: none"> • Wastewater treatment capacity • Foul network capacity • Clean water treatment capacity • Clean water network capacity 	Anglian Water
Areas with Critical Drainage Problems		EA
Anglian River Basin District Results	Geo PDF's	EA
Anglian River Basin District - River Basin management Plan	Part 1	EA
Site Allocations	SHEELA Site Allocation	FDC
Flood and Water Management	Planning supplementary document	FDC
EA flood risk assessment of SHEELA sites	EA flood risk assessment of SHEELA sites	EA

Appendix B

Flood Zones, Vulnerability Classifications and Compatibility

B1 Definition of Flood Zones

Table 1 of NPPG (Ref. 28) sets out the definitions of the Flood Zones, from low to high probability of river and sea flooding, and refers to the Environment Agency's Flood Map for Planning (Rivers and Sea) which shows the location of these Flood Zones. This map and maps showing other sources of flooding are available from the Environment Agency.

Table B1: Table 1 of Planning Practice Guidance – Flood Zones

Flood Zone	Definition
Zone 1 - Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea (tidal) flooding.
Zone 2 - Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea (tidal) flooding.
Zone 3a - High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea (tidal) flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

B2 Vulnerability classification

Table 2 of NPPG classifies vulnerability according to the type of development and vulnerability of its users.

Table B2: Table 2 of Planning Practice Guidance – Flood risk vulnerability classification

Essential Infrastructure
<ul style="list-style-type: none"> Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. Wind turbines.
Highly Vulnerable
<ul style="list-style-type: none"> Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. Emergency dispersal points. Basement dwellings. Caravans, mobile homes and park homes intended for permanent residential use. Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').
More Vulnerable
<ul style="list-style-type: none"> Hospitals Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. Non-residential uses for health services, nurseries and educational establishments. Landfill* and sites used for waste management facilities for hazardous waste. Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable
<ul style="list-style-type: none"> Police, ambulance and fire stations which are not required to be operational during flooding. Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'More Vulnerable' class; and assembly and leisure.

- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill* and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

Water-Compatible Development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Table 3 of NPPG relates flood risk vulnerability to flood risk compatibility, i.e. it indicates what types of development are or not allowed in each Flood Zone. Table 3 of NPPG also informs in which cases an Exception Test will be required. Consistently with this SFRA/WCS, the same traffic light visualisation method has been applied to this table.

Table B3: Table 3 of Planning Practice Guidance – Flood risk vulnerability and flood zone ‘compatibility’

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:

- ✓ Development is appropriate
- ✗ Development should not be permitted.
- † In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.
- * In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:
 - remain operational and safe for users in times of flood;
 - result in no net loss of floodplain storage;
 - not impede water flows and not increase flood risk elsewhere.

Appendix C

Historic Flooding Records

Note: The incidents presented in the tables below reflect locations where flooding occurred in the past. In some of the cases, works may have subsequently taken place to reduce the risk. This information aims to advise developers to contact the relevant stakeholders (Cambridgeshire County Council and the Environment Agency) regarding these past incidents and any existing residual risk.

Table C1: Historic records of flooding events in Fenland district

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
1912	Ramsey		Not recorded	Not recorded
1937	Widespread across the Great Ouse Catchment	Widespread flooding, mostly farmland (excess of 2300 acres)	Not recorded	Not recorded
1947	Great Ouse, River Cam, Bedford Ouse, Wissey and Cottenham Lode	Lowlands of Great Ouse, Welland and Nene	Not recorded	Fluvial
1950	River Nene	Seven flood peaks with sustained high discharge	Not recorded	Fluvial
1950	River Ouse	Catchment wide surface water flooding	Not recorded	Surface water
1960	River Nene	Localised flooding caused by fluvial and high tide	Not recorded	Fluvial and tidal
1974	River Nene	Shallow inundation of the floodplain. No major flooding reported.	Not recorded	Tidal
1978	Surface Water flooding in Wisbech and Sutton Bridge	Discharge of surface water impeded by high tides	Not recorded	Surface water and tidal
1978	River Nene	Breach in the wash sea defence at Ingleborough on the right bank, approximately 5km downstream of Wisbech. The tide reached near to the 1 in 200 year level and was accompanied by strong winds and wave action, Defence were overtopped at Wisbech and 1 life was lost.	Not recorded	Tidal breach
1981-1982 Winter	River Nene	Agricultural land flooded, but few roads and no properties were flooded	Not recorded	Not recorded
1983	River Nene	Navigation on River Nene closed. Flood storage areas put to effective use to keep flows within bank other than at isolated low spots	Not recorded	Not recorded
1998	River Great Ouse and tributaries including Alconbury Brook and the River Kym	600 buildings, 9000 ha farmland affected, disruption caused to gas and electricity supplies.	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
1998	Middle Level Catchment	Total of approximately 2800 properties affected, nearly 90% residential and 90% in Northampton. Commissioners system experienced high water levels, all pumping stations discharging into system were turned off for 24 hrs to protect raised defences all alleviate flooding by allowing peak flows to pass.	Not recorded	Not recorded
01/05/2012	Gaul Road, March	Potential flood risk to property on Gaul Road,	Not recorded	Not recorded
03/05/2012	West Delph Whittlesey	Blocked culvert and ditches silted up	Not recorded	Not recorded
23/07/2012	Gosmoor Lane and Roseberry Road Elm		Not recorded	Not recorded
02/08/2012	Mere View Yaxley	There has been flooding of the road – Mere View – caused by poor gulleys, roots in pipes and unmaintained balancing ponds.	Not recorded	Not recorded
28/08/2012	Ellingham Avenue and Morton Avenue March		Not recorded	Not recorded
19/10/2012	Mere View Yaxley	Yaxley puddle is due to there being no gullies in the road in that area and works to provide several is due to start in the next fortnight.	Not recorded	Not recorded
30/11/2012	Woolpack Lane Car Park, Whittlesey	Drainage of car park connects into a drain which is collapsed - drain not HW or AW	Not recorded	Not recorded
03/01/2013	Overstone Drive Coldham	Highways related	Not recorded	Not recorded
11/04/2013	Benwick county farms Benwick	50 acres of flooded land, believed to be caused by leakage through Nene banks however MLC will not investigate at this stage.	Not recorded	Not recorded
06/01/2014	Wisbech Road, March	Flooding to bungalow trapping her in the property and making the toilet unuseable. Occurred on a number of occasions. Flooding only began after the development of KFC next door and changes to HW layout in front of her property.	Not recorded	Not recorded
06/01/2014	North Brink, Wisbech	Issues related to tidal flaps following recent high water. Funds have been allocated to repair and replace the broken flaps.	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
03/02/2014	Norwood Road, March	Drainage canal behind property causing flooding, believes that rubbish and vegetation is preventing water flowing away. Water floods the garden after heavy rainfall, house set higher so not at risk.	Not recorded	Not recorded
24/01/2014	Primrose Hill, Doddington	Complaint of recent flooding around property where shallow ditches have surcharged casuign water to enter her conservatory. Sass took a call reporting the flooding had worsened and toilet was unusable	Not recorded	Not recorded
07/02/2014	Elm Low End, Elm	Properties at imminent risk of flooding. Work was meant to have happened which did not and there was high risk of flooding.	Not recorded	Not recorded
24/06/2014	Ingham Hall Gardens, Parson Drove, Wisbech	Flooding occurred on an unadopted road. Mor gullies and drains inserted on the road.	Not recorded	Not recorded
30/06/2014	Oldfield Lane, Wisbech	Flooding in Hundreds of Wisbech reported by MLC. MLC checked and responded to the complain asking for further detail but no reply was received.	Not recorded	Not recorded
08/08/2014	Nene Parade, March	Quantity of rainfall overwhelmed the pipes and sewers resulting in water not draining. Erosion to the banks of the river from water puring over the edge from Nene Parade.	Not recorded	Not recorded
08/08/2014	Ellingham Avenue, March	Resident reported 9inc flooding through CCC wesite. No internal flooding but flooding of the gardens, fields and roads. AWS pump was not coping with the quantity of water. Residential hosuing still being build and problem is worsening.	Not recorded	Not recorded
08/08/2014	Birchwood Avenue, March	Claims from residents that the drainage is badly neglected and the area floods regularly. Gullys are blocked which were subsequently cleared and running clearly now. New drainage scheme in place for Birch Ave.	Not recorded	Not recorded
08/08/2014	Elm	Resident reported 4in of water flooding their garden and house as well as neighbours property. Also reported to the waterboard.	Not recorded	Not recorded
08/08/2014	6 ft Bank, Stonea	Road closed due to large volume of water.	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
08/08/2014	Huntongdon Road, Chatteris	House flooded second time in 2 month, no history of flooding in past 5 years so something possibly wrong with drainage. First time there was sewerage, second time it was just SW. Water back up through the toilet and flooded the bathroom.	Not recorded	Not recorded
08/08/2014	Fisherman's Drive, March	Road flooded and water didn't drain away until early Monday after the weekend. The road has suffered for years from flooding despite this being a heavy downpour. Drains appear to be rapidly overwhelmed, no issues reported when they were cleansed.	Not recorded	Not recorded
08/08/2014	Cherrywood Avenue, March	Properties flooded internally - extensive road flooding, rear gardens and houses. Water clear in a few days. Linked to 14/054	Not recorded	Not recorded
08/08/2014	Century Way, March	Highways flooding. Internal flooding of one property reported to AW.	Not recorded	Not recorded
08/08/2014	Windsor Drive, March	Flooding also on Elm Road and Nursery Gardens. Highways flooding, AWS reported issues. Surveys show the systems running as they should	Not recorded	Not recorded
08/08/2014	Queen Street, March	Roadside terraces affected. Down to a capacity issue	Not recorded	Not recorded
08/08/2014	Truman Avenue, March	Water on the highway	Not recorded	Not recorded
08/08/2014	Fisherman's Drive, March	Reported as a historic issue, flooded regularly over past years	Not recorded	Not recorded
08/08/2014	Wisbech Road, March	Wet spot 1 SWPM. Properties were flooded.	Not recorded	Not recorded
08/08/2014	Poplar Close, March	Reported by residents. Drains not clearing very quick causing water to pond. The gullies were all jetted.	Not recorded	Not recorded
08/08/2014	Gold Street, March	Reported to AWS residents flooded with sewerage. Issues related to watercourse/AW drain at the back running behind Norwood Close. Culvert resurfaces at beetroot factory.	Not recorded	Not recorded
08/08/2014	Century Way, March	Highway flooding only. Due to capacity issue, shear volume of water	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
08/08/2014	Highfields road, March	Water came up over the path into front garden, into air bricks of bungalows, conservatory flooded. Bottom end didn't flood but top end did. Drain in around 3 hours.	Not recorded	Not recorded
08/08/2014	Campbell Way, March	Conservatory flooded. System all running clear after the investigation and jetting of the pipes.	Not recorded	Not recorded
08/08/2014	Hostmoor Way, March	Tesco store closed as car park flooded, water in shop but not stated as internal flooding	Not recorded	Not recorded
08/08/2014	Morton Avenue, March	internal flooding. History of flooding in the area.	Not recorded	Not recorded
08/08/2014	Upwell Road, March	Garden flooded. Jetting undertaken and blockage cleared.	Not recorded	Not recorded
08/08/2014	Creek Road, March	Ditch overflowed into garden. Ditch riparian responsibility with no obvious inlet or outlet. Drains and gullies also not draining fast enough	Not recorded	Not recorded
08/08/2014	Lime Grove, March	AW system backing up, thought to be a blockage. Internal flooding at residents house. Ruled to be a capacity issue.	Not recorded	Not recorded
08/08/2014	Beercroft Road, Wisbech	Highways flooding	Not recorded	Not recorded
08/08/2014	Harecroft Road, Wisbech	Road closed and cricket club flooded. AWS sewerage flooding at the leisure centre.	Not recorded	Not recorded
08/08/2014	South Fens, Chatteris	Car park flooding.	Not recorded	Not recorded
08/08/2014	Northgate Close, Whittlesey	Blocked drain, lower rainfall experienced here compare to other places	Not recorded	Not recorded
08/08/2014	Gaul Road, March	Reported significant problems, previous flooding in 2012 (FI/014). Sewerage issues reported affecting external grounds around properties on Gaul Road	Not recorded	Not recorded
08/08/2014	Various locations around March	Alpha Street, Station Road, North Street, Norwood Ave. Internal flooding at multiple locations. Sewerage reported in some cases.	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
08/08/2014	Various locations around March	Alpha Street, Station Road, North Street, Norwood Ave. Internal flooding at multiple locations. Sewerage reported in some cases.	Not recorded	Not recorded
08/08/2014	Various locations around March	Alpha Street, Station Road, North Street, Norwood Ave. Internal flooding at multiple locations. Sewerage reported in some cases.	Not recorded	Not recorded
08/08/2014	Various locations around March	Alpha Street, Station Road, North Street, Norwood Ave. Internal flooding at multiple locations. Sewerage reported in some cases.	Not recorded	Not recorded
01/08/2014	Burrowmoor Road	Considerable flooding on the road outside no. 90-96. Not believed that any got into the properties but it was close.	Not recorded	Not recorded
08/08/2014	Gorefield Road, Leverington	Flooded in heavy rainfall. Has occurred on 4 or 5 occasions in past 7 years. Who property flooded by 2 inches above new raised flood recently put in. Garden under 4-5 inches. Gorefield water welling up from the sewer and access points of gutters	Not recorded	Not recorded
08/08/2014	Calvary Drive, March	Resident filled in FI report sheet stating water flooding across the whole road at the length of 7 houses. A manhole overflowed at property flooding them through the back doors.	Not recorded	Not recorded
08/08/2014	Knights End Road, March	Lobby and utility room flooded to 2 inches as well as driveway and garden	Not recorded	Not recorded
08/08/2014	Orwell Drive, March	Resident reports 18 inches of flooding to whole bungalow, garage and gardens	Not recorded	Not recorded
08/08/2014	Rookwood Road, March	Kitchen and utility room flooded from heavy rainfall. Linked to the poorly designed tanking inserted to compensate for raising the ground next to property	Not recorded	Not recorded
08/08/2014	West End, March	External flooding reported of sewerage and waste. Never heard back from AW so contacted CCC.	Not recorded	Not recorded
08/08/2014	Cedar Close, March	Cllr reported flooding. Two properties flooded internally. Residents are currently displaced	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
19/11/2014	Main Road, Fridaybridge	Cllr Gillilick reported the issues has reported it to HW in the past. HW rodded the drain but it did not help. Chip shop has been flooded internally and brush water away from the house next door.	Not recorded	Not recorded
24/11/2014	Blue Lane, Wimblingdon	Standing water surround property at 2-3 inches. No internal flooding or water network issues. Soakaway not working due to high water table	Not recorded	Not recorded
08/08/2014	Elm Road, March	Reported flood damage to property. Problem may be a blocked pipe or dyke in the verge from Elm Road running toward the frontage of residents properties	Not recorded	Not recorded
05/10/2014	Elliot Road, Windsor Drive, March	Flooding to the depth of 5" internally at due to new developments around the property	Not recorded	Not recorded
12/12/2014	Birch Grove, Elm, Wisbech	Road totally covered in water. Running down neighbours driveway. Happening often and getting worse as well as taking longer to clear. Water flooding front garden and driveway. Believed to be a SW sewer.	Not recorded	Not recorded
14/01/2015	Cavalry Drive, March	Flooding on both road and drive for both properties. Likely cause is a blockage at the bottom of Percheron Drive. Related 14/102	Not recorded	Not recorded
09/04/2015	Fridaybridge Road	During a recent inspection of the area it was found that the site is 0.5m lower than the adjacent footpath and road meaning there is a higher risk of surface water runoff around properties	Not recorded	Not recorded
27/07/2015	Coldhorn Crescent, Wisbech	Wisbech suffers flash flooding on a regular basis and SW cannot flow away due to drainage issues. Concern over possibility of internal flooding. Gullies on Coldhorn Crescent jetted to help alleviate SW	Not recorded	Not recorded
27/08/2015	Station Road, Whittlesey	During street works resident was found to be doing unapproved street works following no action taken regarding floor reports made to FDC	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
15/09/2015	Eastwood Avenue, March	HW flooding reported via facebook to FDC. Ponding water ever time there is heavy rainfall. Water sits in driveways, properties front gardens	Not recorded	Not recorded
10/12/2015	London Road, Chatteris	Reports of 2ins of water standing in garden for 2-3 weeks. Apparently, a pipe comes through the middle of hid garden and water has been coming up into the garden. Rodded his own section and therefore the pipe must be blocked elsewhere.	Not recorded	Not recorded
07/01/2016	Huntingdon Road, Cahtteris	Surface water flooding caused by a blocked drain in the road causing water to back up and cover the pavement. Residents can't enter their own properties	Not recorded	Not recorded
14/01/2016	Cavalry Drive, March	Road and drive at multiple properties are completely flooded. Possible cause is a blockage at the bottom of Percheron Drive. Case related to FI/14/102	Not recorded	Not recorded
04/01/2016	Overstone Drive, Colham, March	Phonecall from a resident who was currently flooding from an unknown source. Water was backing up the sewerage system making toilet and bath unusable	Not recorded	Not recorded
10/01/2016	Westbourne Road, Chatteris	Flooding caused by the dyke being filled in with rubbish and blocking the flow of water between multiple properties. Water is flowing into the gardens of the surrounding properties	Not recorded	Not recorded
28/01/2016	Station Road, Manea	Overflowing of the ditch along the road causing flooding of the building site	Not recorded	Not recorded
10/03/2016	Westfield Road, Manea	Front garden of property having 4 inches of water ponding in their front garden with heavy rainfall	Not recorded	Not recorded
10/05/2016	Ancaster Way, Doddington	Garden flooding from highways due to blocked gully at property	Not recorded	Not recorded
07/06/2016	Alpha Street, March	3-4 inches of flooding in the garden at property. Flooding also occurring in the back lane and out the front of the house onto the road. Neighbours also affected	Not recorded	Not recorded
16/06/2016	Cedar Close, March	Two properties flooded. Water came up to property after heavy rainfall period as the gullies were not	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
		clearing properly at the top and bottom of the road. Middle of the road drained fine.		
12/06/2016	Oil Mill Lane, Wisbeach	Blocked gullies and sewers causing water to flow down the street	Not recorded	Not recorded
13/06/2016	Fishermans Drive, March	Flooding at bottom of cul-de-sac when there is any rain making pedestrian access to some properties difficult . Caused by blocked gullies and drains	Not recorded	Not recorded
16/06/2016	Grimmers Road, Wisbech	Flooding at garages and driveways when there is any rain.	Not recorded	Not recorded
20/06/2016	Morton Avenue, March	Happening to the whole street. Regular flooding with heavy rain in gardens and occasionally internally	Not recorded	Not recorded
13/06/2016	Collingwood Avenue, March	In the areas outside the front of the property the drain is overflowing on the street and causing there to be pooling water on the highway and path	Not recorded	Not recorded
26/06/2016	Norwood Road, March	Water flows from the highway over the footpath and into the garden. This occurs regularly with heavy rainfall to around 2-3 inches	Not recorded	Not recorded
01/07/2016	Cherrywood Green, March	Flooding as a result of a poorly maintained ditch running down the side of the property.	Not recorded	Not recorded
22/07/2016	Millfield Close, Chatteris	Blocked road drains are overflowing with heavy rain. Driveway and porch flooded at property. Floods up to doorstep.	Not recorded	Not recorded
23/01/2017	Wisbech Road, March	Two Blocked drains outside of multiple properties leading to flooding of the pavements and driveways in heavy rainfall. Drains need clearing.	Not recorded	Not recorded
14/08/2017	Fishermans Drive, March	Flooding in the area around Fishermans Drive. Gullies were blocked causing issues. Ther have been derooted and should be relatively clear from now on. Need regular root clearing.	Not recorded	Not recorded
25/07/2017	Riverside Close, Whittlesey	During heavy rain, water flowed up through the wetroom floor and into the property through the drains flooding about 1 inch across the whole ground floor.	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
04/07/2017	Birch Grove, Elm	Ditch is blocked along Fridaybridge Road causing surface water discharge along the back of the properties on Birch Grove. This is a Riparian owned ditch.	Not recorded	Not recorded
01/10/2017	Gorefield Road, Leverington	Flooding of the property on Gorefield Road.	Not recorded	Not recorded
18/07/2017	Wisbeach St Mary	Flooding caused by surface and fluvial water not draining into the SW system. Flooding has been internal on a number of properties and people were temporarily removed during repairs. External flooding was also prevalent with standing water being present for a prolonged period.	Not recorded	Not recorded
27/12/2018	Birch Grove, Elm	Flooding on highways outside 6 properties. Reported previously on 3 occasions.	Not recorded	Not recorded
27/12/2018	Gaul Road, March	Facebook message received by FDC reporting flooding to resident's garden and water did not reduce in depth for 24hrs. Sent to EA but expecting to come back to us	Not recorded	Not recorded
27/12/2018	Gold Street March	Foul water found in front and back gardens of properties. Issue arises from the fact these properties are only connected to the AW foul sewer	Not recorded	Not recorded
11/03/2018	The Stitch, Friday Bridge	Councillor contacted JB in reference to a previous email about houses regularly affected by flooding highlighting The Stitch as a problem area.	Not recorded	Not recorded
26/03/2018	March Rd, Rings End	Residents experiencing water pools in garden even at driest points of year - possible damaged water pipe. Residents have contacted AW and highways.	Not recorded	Not recorded
11/04/2018	Cornfields Doddington	Surface water is running off fields behind resident's house into garden. Resident attributes problem to the filling in of a drainage channel and raising of land which has taken place due to a new housing development.	Not recorded	Not recorded
12/04/2018	Green Park, Chatteris	Water is running off field at back of property into resident's (and neighbours') back garden and garages	Not recorded	Not recorded

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
23/04/2018	Elliott Road March	Residents refer their experience of flooding in their home within an objection letter sent in response to F/YR18/0298/F development. EH offers assistance and requests further information about flooding, see folder for emails.	Not recorded	Not recorded
26/04/2018	Station Drive, Wisbech St Mary	Resident is experiencing poor drainage in garden. Flooding occurs even after a small amount of rain, and has caused damage in shed. Resident attributes flooding issue to sewage issues on new housing development to the rear of property (reports that water	Not recorded	Not recorded
25/06/2018	The Boat Inn, 2 Ramsey Road, Whittlesey	Internal flooding of The Boat Inn after every rainfall.	Not recorded	Not recorded
18/04/2019	March Road, Rings End	Flooding of property from road water - ongoing issues	Not recorded	Not recorded
04/10/2019	Drivers Close, Doddington		Not recorded	Not recorded
27/11/2019	Kirkagte Tydd St. Giles	Flooding caused by blocked ditch	Not recorded	Not recorded
08/05/2019	Coates Road Whittlesey	Highways related	Not recorded	Not recorded
16/08/2020	ST. MARTINS ROAD, CHATTERIS	My garden	25 cm, up to the door sill on outbuilding.	Highways drains/gullies overflowing
16/08/2020	Morton Avenue March	Inside house	Several inches	AW pumping station implicated/functionality did not help
16/08/2020	EDEN CRESCENT, CHATTERIS	My garden, Outbuildings (including garages), Other gardens nearby, Land, Roads	6-7 inches on road at lowest point, 3 inches in garden	Highways drains/gullies overflowing, Drains blocked. Toilet overflowing
16/08/2020	JAMES GAGE CLOSE, CHATTERIS	My garden, Other gardens nearby	8 inches	Highways drains/gullies overflowing, Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Creek Road, March	My Garden, Other Gardens Nearby	8-9 inches	Don't know
23/12/2020	Lime Grove March	My garden, Outbuildings (including garages), other gardens nearby, inside other homes nearby	5 to 6 inches - Chickens outside at risk. Pet rabbit.	Highway drains/gullies overflowing, surface water sewer overflowing, foul sewer overflowing
23/12/2020	Brewin Avenue, March	My garden, Outbuildings (including garages), Other gardens nearby, Land	3 inches - very close to entering patio doors	Highways drains/gullies overflowing, Culvert - piped watercourse blocked e.g. under roads or driveways, Don't know

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
23/12/2020	Chesnut Avenue, Welney, Wisbech	Inside my house, My garden, Other gardens nearby, Inside other homes nearby	Outside it is higher than the doorstep, and beginning to flood inside. My neighbours and probably many others on chestnut avenue, Welney, have the same problem. I am worried and need sandbags please.	High water table (groundwater flooding)
23/12/2020	Robingoodfellows Lane, March	My garden	Quarter way up my leg	Neighbour has bricked garden which has stopped the flow of water so now our gardens flood when it rains badly
23/12/2020	Knights End Road, March	My Garden	6 inches up to 2 bricks high at front and side of house where front garden water had accumulated.	High water table (groundwater flooding)
23/12/2020	Park Road Manea March	My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby, Fields	Approx. 150mm of water in the garden	Surface water sewer overflowing
12/23/2021	Upwell Road March	My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby, Land	600mm	Watercourse overflowing e.g. ditch dyke, stream, Run off from fields, High water table (groundwater flooding), Run off from adjacent prop
04/12/2020	Park Road Manea March	Inside my house	1 inch	High water table (groundwater flooding)
12/22/2020	Eastwood End Wimblington	Inside my house, My garden, Fields	Up to skirting board level, about 4 inches	Watercourse overflowing e.g. ditch dyke, stream, High water table (groundwater flooding), Surface water sewer overflowing
23/24 Dec 2020	Morton Avenue, March	internal property flooding	no info	surface water
23/24 Dec 2020	Newgate Street, Doddington	internal property flooding	no info	surface water
23/12/2020	Elm Road March	Inside my house, My garden, Other gardens nearby, Inside other homes nearby	1inch inside house	Highways drains/gullies overflowing, Surface water sewer overflowing
23/12/2020	Burrowmoor Road March	My garden, Outbuildings (including garages), Other gardens nearby	1 foot at deepest point of garden. Up to door step of house	Highways drains/gullies overflowing, Watercourse overflowing e.g. ditch dyke, stream
23/12/2020	Heathcote Close March	My garden, Outbuildings (including garages), Other gardens nearby, Land	Up to door step level	Highways drains/gullies overflowing, Run off from fields, Heavy rainfall
23/12/2020	Cavalry Drive March	Road around house	6 inches in places	don't know

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
23/12/2020	West End March	My garden, Outbuildings (including garages), Other gardens nearby, Land	At one point half a meter	Highways drains/gullies overflowing, Culvert - piped watercourse blocked e.g. under roads or driveways, Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Cherrywood Avenue March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby	Up to door step level	Highways drains/gullies overflowing, Culvert - piped watercourse blocked e.g. under roads or driveways, Run off from fields, Foul sewer overflowing, Main river overflowing, Don't know
23/12/2020	Morton Avenue March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby	Throughout the property there was 12 inches of water and more in the front and back garden .	Don't know
23/12/2020	Morton Avenue March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby, Land, Fields,	2 feet	Highways drains/gullies overflowing, High water table (groundwater flooding), Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Cavalry Drive March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby	4 inches sewer water inside kitchen. About 8/10 inches outside. Garden and front of house. Road from no7 to no 21	Highways drains/gullies overflowing, Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Norwood Road March	Inside my house, My garden, Outbuildings (including garages)	6 inches	Highways drains/gullies overflowing, Foul sewer overflowing
23/12/2020	Norwood Road March	My garden, Driveway	Water off the road flooded our neighbours driveway (few inches deep) then came onto our front garden and flooded our drive and the channel around our bay window (water was inside but not much and no damage caused that we have found, we think it must have come through brickwork somehow where the channel was flooded)	Highways drains/gullies overflowing
23/12/2020	Elliott Road March	My garden	10 inches	don't know
23/12/2020	Cavalry Drive March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby	12cm	Highways drains/gullies overflowing, Foul sewer overflowing
23/12/2020	Mills Gardens March	My garden, Outbuildings (including garages)	6 inches	Highways drains/gullies overflowing, From other properties land which is higher than mine.

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
23/12/2020	Lime Grove March	My garden, Other gardens nearby, Inside other homes nearby, Fields	6 inches	Highways drains/gullies overflowing, Watercourse overflowing e.g. ditch dyke, stream, Surface water sewer overflowing
23/12/2020	Norwood Road March	My garden, Other gardens nearby	Up to kick board level on fence	don't know
23/12/2020	Sycamore Close March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby	3ft approx outside, 4 inches inside my house approx	Highways drains/gullies overflowing, Surface water sewer overflowing
23/12/2020	Elliott Road March	Inside my house, My garden, Other gardens nearby	4 inches	Highways drains/gullies overflowing, High water table (groundwater flooding), Surface water sewer overflowing
23/12/2020	The Bramleys Barkers Lane March	My garden, Other gardens nearby	Doorstep level	Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Gold Street March	Inside my house, My garden, Inside other homes nearby	13 inches	Watercourse overflowing e.g. ditch dyke, stream, High water table (groundwater flooding)
23/12/2020	Stonald Road Whittlesey Peterborough	My garden	4 or 5 inches	High water table (groundwater flooding)
23/12/2020	Burrowmoor Road March	My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby	300mm	Highways drains/gullies overflowing, Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Norfolk Street Wimblington March	My garden, Other gardens nearby	12 inches deep at the left hand side of garden to 2inches deep on the right hand side of garden. The centre part was 8 inches deep	Culvert - piped watercourse blocked e.g. under roads or driveways, Man made open water channel overflowing
23/12/2020	Elwyn Road March	Inside my house	downstairs toilet started to overflow into bathroom due to the excessive rain. We had to bail out 3 buckets of water from the toilet pan onto our garden to stop flooding and also bail water onto the garden from our outside drain where the bathroom pipes and the roof downpipe meet as that was overflowing into our yard	Don't know
23/12/2020	Fridaybridge Road Elm	My garden, Outbuildings (including garages), Other gardens nearby, Fields	Door step level	Highways drains/gullies overflowing, Foul sewer overflowing

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
23/12/2020	Newgate Street Doddington March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby, Fields	12-14 INCHES	Don't know
23/12/2020	Newgate Street Doddington March	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby	At least 1 foot indoors (above electrical sockets and lowest staircase step). At least 2 feet outside (up to garage door handle).	Highways drains/gullies overflowing, Watercourse overflowing e.g. ditch dyke, stream, Culvert - piped watercourse blocked e.g. under roads or driveways, Surface water sewer overflowing
23/12/2020	Fridaybridge Road Wisbech	Inside my house, My garden	It was about an inch in the house and about 6 inches in the garden.	Highways drains/gullies overflowing, Surface water sewer overflowing, Foul sewer overflowing
23/12/2020	Brewin Avenue March	Fields	1-2 ft	High water table (groundwater flooding)
23/12/2020	Russell Avenue March	My garden, Land	4-5 ins back garden, garden completely flooded 20x10 metres. Front 3 ins, neighbour who had a pump saved further flooding to front garden	Culvert - piped watercourse blocked e.g. under roads or driveways, Don't know, Blocked storm drain and sewer drains
23/12/2020	Newgate street Doddington	Inside my house, My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby	Upto sockets I'm still out of hour	Foul sewer overflowing
22/12/2020	Church Road Christchurch Wisbech	Inside my house, My garden, Other gardens nearby, Inside other homes nearby	1inch	High water table (groundwater flooding)
24/12/2020	Brichwood Avenue March	My garden, Outbuildings (including garages)	Over the patio to a depth of 8 inches in the back. It moved the railway sleepers round our raised bed. About 5 inches in the front garden.	Surface water sewer overflowing, Heavy rain
23/12/2020	Church Lane Doddington March	Inside my house, My garden	6cm	High water table (groundwater flooding), Foul sewer overflowing
23/12/2020	Elm Road March	Inside my house, My garden, Other gardens nearby, Inside other homes nearby, Land, Fields	About 3 inches above floor, approximately 12 inches under floorboards.	Highways drains/gullies overflowing, Watercourse overflowing e.g. ditch dyke, stream, Culvert - piped watercourse blocked e.g. under roads or driveways, Run off from fields, High water table (groundwater flooding)

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
24/12/2020	Wisbech Road March	Business Premises	150mm deep in some areas, void beneath wooden floor still flooded to 200mm but being addressed by insurers	Highways drains/gullies overflowing, Watercourse overflowing e.g. ditch dyke, stream
23/12/2020	Brewin Avenue March	My garden, Outbuildings (including garages), Other gardens nearby	Around 3 inches deep	Don't know
23/12/2020	Fairview Drive Chatteris	Inside my house	Insurance company sent humidifiers on Boxing Day to dry out conservatory	High water table (groundwater flooding)
23/12/2020	Kingsland Close Doddington March	My garden, Other gardens nearby, Inside other homes nearby, Land, Fields	15cm	Run off from fields
23/12/2020	Cornfields Doddington March	My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby, Land, Fields	Up to bottom of air bricks	Watercourse overflowing e.g. ditch dyke, stream, Culvert - piped watercourse blocked e.g. under roads or driveways, Run off from fields, Surface water sewer overflowing
24/12/2020	Euximoor Christchurch Wisbech	My garden, Outbuildings (including garages), Other gardens nearby, Land, Fields	Different levels in different areas ,Deepest part is probably about 2ft	Watercourse overflowing e.g. ditch dyke, stream, Run off from fields
23/12/2020	Wisbech Road March	Inside my house, My garden, Inside other homes nearby	ANKLE DEEP	Highways drains/gullies overflowing
23/12/2020	East Street Manea March	Inside my house	Around 5cm	High water table (groundwater flooding)
23/12/2020	Stevens Way March	My garden, Outbuildings (including garages), Other gardens nearby	6 inches plus	High water table (groundwater flooding), Flow from adjoining higher land & derelict buildings
23/12/2020	Wisbech Road March	Inside my house, My garden, Other gardens nearby, Inside other homes nearby	1 inch over a /large area of living floor	Highways drains/gullies overflowing
23/24 Dec 2020	Hutchinson Close Manea	no info	no info	no info
23/24 Dec 2020	Station Road Manea	no info	no info	no info
23/24 Dec 2020	Poppyfields Manea	no info	no info	no info
23/24 Dec 2020	Purls Bridge Drove Manea	no info	no info	no info
23/24 Dec 2020	Rutland Way Manea	no info	no info	no info
23/24 Dec 2020	School Lane Manea	no info	no info	no info
23/24 Dec 2020	Westfield Road Manea	no info	no info	no info

Incident Date	Location	Details	How deep is/was the flood	Source of the flooding
23/24 Dec 2020	Addison Road Wimblington	no info	no info	no info
23/24 Dec 2020	Bridge Lane Wimblington	no info	no info	no info
23/24 Dec 2020	Chapel Lane Wimblington	no info	no info	no info
23/24 Dec 2020	Hassock Way Wimblington	no info	no info	no info
23/24 Dec 2020	Meadow Way Wimblington	no info	no info	no info
23/12/2020	Poppyfields Avenue Manea March	My garden, Outbuildings (including garages), Other gardens nearby, Inside other homes nearby, Land	6 inches up to door step level	Highways drains/gullies overflowing, Watercourse overflowing e.g. ditch dyke, stream, Run off from fields, High water table (groundwater flooding), Surface water sewer overflowing, Foul sewer overflowing
23/24 Dec 2020	Upwell Road March	My garden, Outbuildings (including garages), Other gardens nearby, Fields	approximately 150mm	Run off from fields
23/12/2020	Peters Drive Wimblington	My garden, Other gardens nearby, Land, Fields	a few inches	Watercourse overflowing e.g. ditch dyke, stream

Table C2: Historic records of sewer flooding in Fenland District (DG5)

Location (Postcode area)	Number of incidents recorded
PE15 8	28
PE15 9	15
PE15 0	10
PE16 6	8
PE13 5	1

